THE RUBBER AGE

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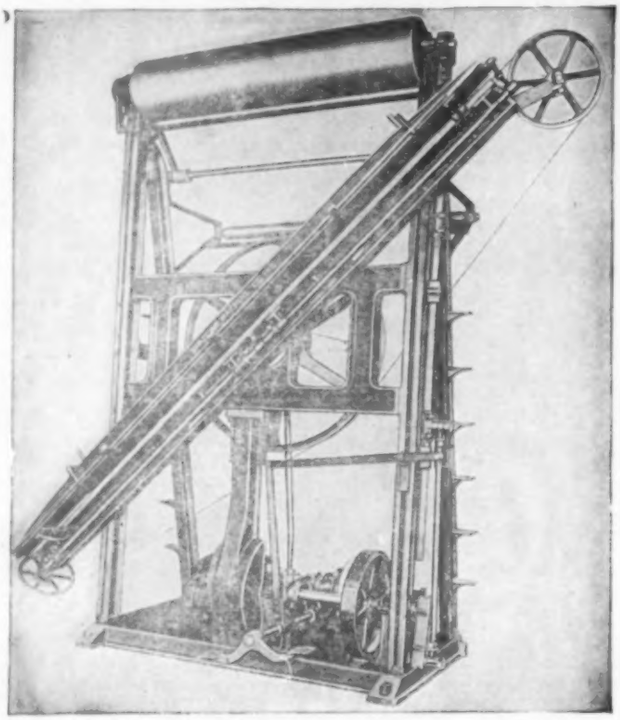

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THE RUBBER AGE

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The Action of Certain Organic Accelerators in the Vulcanization of Rubber-II

By G. D. Kratz, A. H. Flower and B. J. Shapiro

The Falls Rubber Co., Cuyahoga Falls, Ohio

One of the early patents[2] for the use of synthetic nitrogenous organic substances in the vulcanization of rubber refers to the dissociation constant of 1×10^{-5} as the dividing line between accelerating and non-accelerating bases. On the other hand, Peachey[3] has pointed out that certain other substances which are not basic, or but slightly so, are also exceedingly active as accelerators. The number of examples in this class, however, is relatively small.

In the course of the experimental work described in this paper we have made a comparison of the sulphur coefficients of a type mixture vulcanized with the assistance of a number of accelerators closely related to aniline and for which the dissociation constants are known. We have also employed the hydrochlorides of two of these substances, relatively weak and strong bases, in order to observe the effect of the acid portion during the vulcanization. The results obtained and the conclusions drawn led us to employ sulphides of ammonia as accelerators and vulcanizing agents.

Summarizing the Results

Briefly summarizing these results, it was found that with the substances tested there was apparently no direct relationship between their dissociation constants and their excess sulphur coefficients or physical properties after vulcanization. In a closely related series, such as aniline and its methyl derivatives, the substance with the largest dissociation constant was found to be the most active. However, the relative activities of the members of this series were not proportional to their dissociation constants. Generally speaking, the activity of all of the substances could be traced to the amino group, and depended to a large extent upon whether or not substitution had taken place in this group. In this respect, they should probably be regarded as substituted ammonias, rather than as the more complex derivatives of other substances.

One effect of the basicity of two of the substances, methylaniline and *p*-toluidine, was determined with the hydrochlorides of these two substances. Our results showed that with substances of this type, the first effect of the base is to neutralize the retarding action of the acid formed in the decomposition of the salt during vulcanization. We had previously suggested this in a footnote in a former paper.[4] We also found that when the acid liberated in the decomposition of such a salt is neutralized by other substances in the mixture the activity of the hydrochloride is very close to that of the free base. These results are of particular interest, as Van Heurn[5] has shown that, whereas ammonium carbonate is moderately active as an accelerator in a mixture of rubber and sulphur, ammonium chloride is inert. The former salt decomposes into ammonia and a weak acid, the latter into ammonia and a strong acid, according to the following reactions:

$$(NH_4)_2CO_3 \longrightarrow 2NH_3 + H_2O + CO_2$$
$$NH_4Cl \longrightarrow NH_3 + HCl$$

Our final experiments, wherein we found that in a closed system rubber is vulcanized by heating with ammonium polysulphide or ammonium hydrosulphide, were carried on in order to obtain a reaction mixture of undoubted basic character, which at the same time would include H_2S as one of the decomposition products. The function of H_2S in connection with the vulcanization of rubber has long been made a subject of controversy. In the present instance it may be regarded as a very weak acid.

Results with Ammonium Polysulphide

Our results with ammonium polysulphide may be explained as due to the decomposition of this substance into ammonia, hydrogen sulphide, and sulphur, the latter substance being liberated in an active (nascent) form which readily combines with the rubber. The analogy between our results with ammonium polysulphide, and those obtained years ago by Gerard[6] with potassium tri- and pentasulphides, is taken up in greater detail in the experimental part of this paper. It is equally evident, however, that if this explanation is advanced in the case of ammonium polysulphide, vulcanization with ammonium hydrosulphide requires that this substance decompose not into ammonia and hydrogen sulphide only, but with the subsequent formation of a polysulphide which liberates sulphur in the active form[7].

It has been shown by Bedford and Scott[8] that many of the more complex substances which accelerate the vulcanization of rubber react with sulphur, with the liberation of H_2S and the formation of thiourea derivatives. In view of our results with the ammonium sulphides, the action of such thiourea

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[1] Presented before the Rubber Division at the 60th Meeting of the American Chemical Society, Chicago, Ill., September 6 to 10, 1920.
[2] D. R. P. 280,198 (1914).
[3] *J. Soc. Chem. Ind.*, 36 (1917), 950.
[4] *Chem. & Met. Eng.*, 20 (1919), 420.
[5] Comm. of the Netherlands Government for Advising the Rubber Trade and Industry, Part 6, 202.
[6] R. Hoffer, "Treatise on Cautchouc and Gutta-Percha" (trans. Brannt), H. C. Baird & Co., London, 1883.
[7] As an aqueous solution of NH_4HS was employed, the action of this substance may also be explained by its dissociation products. It would dissociate with NH_4^+ as the cation and HS^- the anion. As the HS^- ion itself is weakly acid, there would probably be many H^+ and HS^- ions and but few S^{--} ions in the aqueous solution. The H^+ and S^{--} ions in turn react to form H_2S. On the other hand, $(NH_4)_2S$ dissociates with NH^+, the cation, and S^{--}, the anion. The latter, in the presence of water, dissociates with the formation of OH^- and HS^- ions. Thus, NH_4HS dissociate with the formation of a greater number of H^+ ions than in the case of $(NH_4)_2S$, and consquently with a greater reformation of H_2S. This may account for the difference in the relative activities of the two substances. The same may be true in the absence of water, as most organic accelerators are apparently soluble in rubber, the high dielectric constant of which indicates that this substance itself may be a good dissociating medium.
[8] This Journal, 12 (1920), 31.

derivatives would depend upon their ability to enter into a subsequent reaction with the H_2S formed, or the sulphur present in the mixture, with the formation of a polysulphide. Further, although the formation of a polysulphide in this manner would, to a certain extent, be dependent upon the basicity of the substance originally added as the accelerator, it is obvious that the dissociation constant of the reaction product would be a better indication of its activity than the dissociation constant of the original substance.

cess sulphur coefficient of any one of these substances from that obtained for *p*-phenylenediamine (5.2) leaves a figure very close to the excess obtained for aniline (2.4). Further, although the mixtures vulcanized with the assistance of the three substances in question were found to have the same excess sulphur coefficient, all of them had widely different physical properties. These substances may be regarded as aniline in which hydrogen of the benzene ring has been replaced by radicals.

TABLE I

First Latex Pale Crepe.....100
Sulphur 8.1
Accelerator ..... *x*
Vulcanized for 90 Min. at 148° C.

Substance	Formula	*x* = 0.01 G. Mol.	Determined M. P.or B.P. of Accelerator[1]	Dissociation Constant K at 15° to18° C	Excess Sulphur Coefficient	Physical Properties: Tensile Strength Lbs. per Sq. In. at Break	Physical Properties: Final Length at Break
Control		..	...	.....	(2.581)	1229	1090
Aniline	$C_6H_5NH_2$	0.93	183.1	3.50×10^{-10}	2.400	2005	910
Methylaniline	$C_6H_5NH.CH_3$	1.07	192.0	2.55×10^{-10}	0.612	1665	1050
Dimethylaniline	$C_6H_5N(CH_3)_2$	1.21	192.5	2.42×10^{-10}	0.250	1938	1060
p-Toluidine	$CH_3.C_6H_4.NH_2$	1.07	45.0	1.60×10^{-9}	2.987	2476	920
m-Phenylenediamine	$NH_2.C_6H_4.NH_2$ (1 : 3)	1.08	62.6	1.35×10^{-12}	2.986	1933	830
p-Phenplenediamine	$NH_2.C_6H_4.NH_2$ (1 : 4)	1.08	140.6	2.48×10^{-12} [2]	5.248	193	430
p-Benzidine	$NH_2.C_6H_4.C_6H_4.NH_2$	1.84	126.2	7.40×10^{-13} [2]	3.056	1464	810
Phenylhydrazine	$C_6H_5NH.NH_2$	1.08	240.0	1.60×10^{-9}	0.751	1052	1080
Hydrazobenzene[3]	$C_6H_5NH.NH.C_6H_5$	1.84	126.0	.....	0.777	2165	1140

[1]All m. p. are below, and b. p. above the temperatures of vulcanization. [2]Figure applies to second "K." [3]Does not have basic properties.

In a previous paper[1] we have suggested that the activity of certain nitrogenous substances may be interpreted on the basis of a change in valency of the nitrogen, with the nitrogen functioning as a sulphur carrier. This suggestion was made to assist in correlating the nitrogen content with the activity of the substances employed, although, as pointed out in the above paper, results obtained by others already indicated that the sulphur is not necessarily attached to the nitrogen. While our present results show that vulcanization may be effected by polysulphide formation, they do not exclude the possibility of the active nitrogen group acting as a catalyst.

Experimental Part

The same general method of procedure was pursued in the course of this work as was previously reported in Part I.

The rubber was good quality, first latex, pale crepe, and the same lot was employed for all mixtures. All of the mixtures, the composition of which is shown at the head of the various tables, were mixed and vulcanized as before. Physical tests were made on a Scott testing machine of the vertical type. Sulphur estimations were made by our method, previously described in detail.[2]

The accelerators were purified, and melted or boiled at the temperature shown in the tables. All of the accelerators were compared on a molecularly equivalent basis, 0.01 g. molecule of the accelerator being added for each 100 g. of rubber in the mixture.

Experiment I

The experiment was carried out in order to ascertain the relative accelerating effect of the homologs of aniline and other closely related bases, and also to compare the excess sulphur coefficients with the dissociation constants of the substances originally added as accelerators. The results obtained, together with the physical constants of the substances employed as accelerators, are shown in Table I.

It is evident from this table that with aniline and its methyl derivatives, or in the case of the two phenylenediamines, the substance with the largest dissociation constant produces the greatest excess coefficient of vulcanization. It is also apparent that this relationship is confined to more or less closely related substances only, and that, as a general rule, the dissociation constant is not a reliable guide to the activity of a substance as an accelerator.[3]

Excess sulphur coefficients of equal magnitude (3.0) were obtained from *p*-toluidine, *p*-benzidine and *m*-phenylenediamine. It is interesting to note that the subtraction of the excess sulphur coefficient of any one of these substances from that obtained for *p*-phenylenediamine (5.2) leaves a figure very close to the excess obtained for aniline (2.4). Further, although the mixtures vulcanized with the assistance of the three substances in question were found to have the same excess sulphur coefficient, all of them had widely different physical properties. These substances may be regarded as aniline in which hydrogen of the benzene ring has been replaced by radicals.

On the other hand, (methylaniline), phenylhydrazine, and hydrazobenzene may be regarded as aniline in which the hydrogen of the amino group has been replaced. The difference in the activity of these two types of accelerators has already been mentioned in Part I in connection with the phenylguanidines.

As in the previous instance, the same excess coefficient was obtained for (methylaniline), phenylhydrazine and hydrazobenzene, but the value was much smaller (0.75) then before.

The excess value found for these three substances when subtracted from that obtained for *p*-phenylenediamine gives a figure equal to about twice that obtained with aniline. Here, also, the physical properties of the three mixtures were greatly different.

The discrepancy in the physical properties of mixtures vulcanized to the same sulphur coefficient by means of different accelerators is of especial interest and has been made the subject of a subsequent paper. As our present results are based on one cure only, we are not warranted in drawing

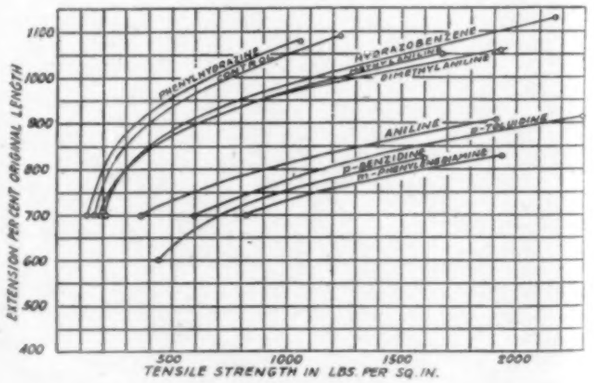


FIG. 1.

many conclusions from those recorded here. A comparison of the results given in Table I, with the stress-strain curves shown in Fig. 1, however, shows that these differences are most evident at, or near, the point of break.

The above results indicate that, irrespective of whether or not an interaction between the accelerator and other substances in the mixture takes place during vulcanization, the activity of substances of the type described is directly traceable to the amino group, and particularly to the first amino group in the benzene nucleus.

Experiment II

In view of the results of Expt. I. they should be analagous to those of ammonia or ammonium salts. From a consideration of the work of Van Heurn it seemed possible

[1] This Journal, 12 (1920), 317.
[2] *India Rubber World*, 61 (1920), 356.
[3] The dissociation constants given in Table I are taken from the Landolt-Boernstein tables and are not strictly comparable, in that they were not all determined by the same method.
[4] *p*-Phenylenediamine was so greatly over-cured that concordant results could not be obtained and no curve is given for this substance.

that certain other substances, or their reaction products, active as accelerators, might decompose with the formation of a (relatively) strong base and a weak acid in an analogous manner; or that some substances, which are not ordinarily classed as accelerators, owing to their decomposition into a weak base and strong acid, might be active if the acid so formed was neutralized by another constituent of the mixture. Aniline sulphate and *p*-toluidine hydrochloride, when employed in the presence of zinc oxide are examples of the latter type.

TABLE II

First Latex Pale Crepe	100	100
Zinc Oxide	0	100
Sulphur	8.1	8.1
Accelerator	*x*	*x*

x = 0.01 g. Mol. of Substance
Vulcanized for 90 Min. at 148° C.

MIXTURE	Sulphur Coefficient	Sulphur Coefficient Over Control (+)	Sulphur Coefficient Under Control (—)	Physical Properties: Tensile Strength Lbs. per Sq. in. (At Break)	Physical Properties: Final Length Per cent (At Break)
Rubber-Sulphur Control	2.789	...	...	1265	1140
Zinc Oxide Control	2.538	...	0.251	..	..
R-S Control + HCl	0.652	...	2.137	564	1250
ZnO Control + HCl	2.491	...	0.047	1783	820
p-Toluidine	5.568	2.779	...	2476	920
p-Toluidine + ZnO	5.371	2.833	...	1824	640
p-Toluidine Hydrochloride	2.308	...	0.481	1070	1210
p- Toluidine Hydrochloride + ZnO	3.990	1.460	...	2485	757
Methylaniline	3.193	0.404	...	1665	1050
Methylaniline + ZnO	2.750	0.217	...	2237	800
Methylaniline Hydrochloride	1.012	...	1.777	530	1150
Methylaniline Hydrochloride + ZnO	2.012	...	0.526	1731	840

In Table II are given the results obtained with molecularly equivalent quantities of *p*-toluidine and *p*-toluidine hydrochloride, in the presence and absence of zinc oxide. Two control mixtures were employed, one with and the other without zinc oxide, no accelerator being added in either case. The excess sulphur coefficients (+ or —) shown in the third and fourth columns of this table were obtained by the subtraction of the coefficients of their respective controls, depending upon whether or not they contained zinc oxide.

From this table it is evident that zinc oxide itself exerts a slight retarding action and the hydrochloric acid is a most effectual retardant, when employed in the absence of zinc oxide. When these two substances were both present in the mixture, however, the sulphur coefficient obtained was practically that of its control.

With *p*-toluidine, the same excess coefficient was obtained in the presence and absence of zinc oxide, a characteristic similar to that noted in the case of aniline, and to be discussed in a subsequent paper. In fact, *p*-toluidine hydrochloride did not greatly retard the vulcanization even when employed in a rubber-sulphur mixture, a fact which we attribute to the strong basic nature of the *p*-toluidine. When used in the presence of zinc oxide, *p*-toluidine hydrochloride markedly accelerated the vulcanization. The physical test results confirmed the sulphur coefficients.

Different Results Obtained

Entirely different results were obtained, however, with methylaniline hydrochloride.[1] This substance, although almost inactive in a mixture which contained zinc oxide, acted as a retardant in a mixture of rubber and sulphur only. In this instance, owing to the weakly basic nature of the methylaniline, the effect of the hydrochloric acid predominated. Here, again, the physical properties of the mixtures were roughly in accord with their sulphur coefficients.

The results show that the tendency of certain substances to decompose or dissociate into other substances with acid properties, or with acid properties predominating, may cause the substance originally added to be classed as inactive or as a retardant. In such cases, the primary function of zinc oxide is to neutralize the acidic constituents and permit the predominance of the accelerator, which is very probably basic.

Experiment III

Many years ago, Gerard[2] noted that vulcanization could be effected by boiling rubber in a concentrated aqueous solution of "liver of sulphur," a reaction which may possibly be represented in the following manner:

$$4K_2CO_3 + S_{10} \longrightarrow K_2SO_4 + 3K_2S_3 + 4CO_2$$
$$K_2S_3 + H_2O \longrightarrow 2KOH + H_2S + S$$

The second reaction, which represents that found by Gerard capable of effecting vulcanization, is analogous to the decomposition of ammonium polysulphide

$$(NH_4)_2S_x \longrightarrow 2NH_3 + H_2S + S_{x-1}$$

In neither of the above instances is the possibilty of the formation of the hydrosulphide (*KSH* or *NH₄SH*) excluded, but it is regarded as an intermediate reaction.

In the present case, where the ammonium sulphides[3] were used, the resultant system can hardly be acid, no matter how the decomposition or dissociation of the sulphide is effected.

A small sample of the rubber was sheeted thin on the mill and cut into two 5-g. portions. Each portion was placed in a glass bomb tube, and a concentrated aqueous solution of ammonium polysulphide was added to one, and ammonium hydrosulphide to the other. Each solution contained approximately 0.5 g of sulphide sulphur. The tubes were sealed and heated for 6 hrs. in an oil bath of 147° C.

Both samples appeared to be vulcanized to a slight extent. The sample heated with ammonium polysulphide was dark in color and quite sticky. The other was lighter in color and not so sticky. Both samples were extracted with acetone for 24 hrs., dried, and the combined sulphur estimated.

The samples heated with ammonium polysulphide and ammonium hydrosulphide were found to have sulphur coefficients of 1.933 and 4.366, respectively.

Conclusions

1—The activity of synthetic nitrogenous organic substances as accelerators is not proportional to the dissociation constants of the original substances and, with the exception of members of a closely related series, no definite relationship exists between the activities and the dissociation constants of the original substances.

2—Substances which decompose or dissociate into other substances of acid character, or react with other components of the mixture to form substances of acid character, do not accelerate unless a neutralizing base or salt is present.

3—Vulcanization is effected by heating rubber in a closed system with concentrated aqueous solution of ammonium sulphides.

[1] When heated to 350° C., methylaniline hydrochloride dissociates into aniline and methyl halide, with the formation of the isomeris *p*- toluidine. Methylaniline hydrochloride was chosen for the comparison with *p*-toluidine hydrochloride, in order to observe if such a rearrangement took place during the vulcanization reaction. From the sulphur coefficients obtained, it is obvious that this transformation did not occur.

[2] *Loc. cit.* The first use of alkaline sulfides, and particularly potassium pentasulphide, for vulcanization, is often attributed to Gerard (compare Charles Hancock, Brit. Patent 11,874 (1847), and Moulton, Brit. Patent 13,721 (1851).

[3] Compare the process of Moureley of Manchester, England, 1884.

Tires in New Zealand

In rubber tires, covers, and tubes in New Zealand American manufacturers lead, but not to the same extent as in motor vehicles, imports from the United States amounting in the first nine months of 1920 to $2,330,723, from Australia $1,130,809 from Canada $902,624, from the United Kingdom $580,427, France $710,957, Italy $495.833, Japan $4,205, and from Belgium $7,168. Australia especially seems to be gaining very rapidly, for during the month of September the imports of rubber tires, etc., from the United States amounted to $316,916, with Australia in second place at $280,585.

The above figures are for the fair market value in the country whence the goods are exported, plus 10 per cent. This means that freight charges, insurance, profits, adverse exchange rates, etc., must be added if the actual cost of the business is to be ascertained, bringing the actual cost to the consumers in this Dominion to $12,500,000 annually. It is estimated that if the good-roads campaign succeeds in giving the Dominion up-to-date public highways, it will save the motor-car owners about $3,750,000 per annum on tires. Motor tires, tubes, and covers enter New Zealand duty free from all countries, with the exception of the 1 per cent war tax that is collected on all imports.

The Making of Tire Fabric

By H. R. Whitehead

Superintendent Textile Division, Mason Tire & Rubber Co., Kent, Ohio

This is the third of a series of articles appearing in the Mason Mail. This installment treats of the final purification process of the cotton and the first step in shaping the fiber for its manufacture into tire fabric.

In the previous article the writer left the reader in the picking department, where the raw material is relieved of the coarser seed and leaf which is found in raw cotton and forms this raw material into an even sheet of cotton rolled into a lap of continuous yardage similar to a roll of wrapping paper.

We now take the lap to the carding engine, or a machine more commonly referred to as the "revolving flat card." To the mind of the writer this is one of the most beautiful

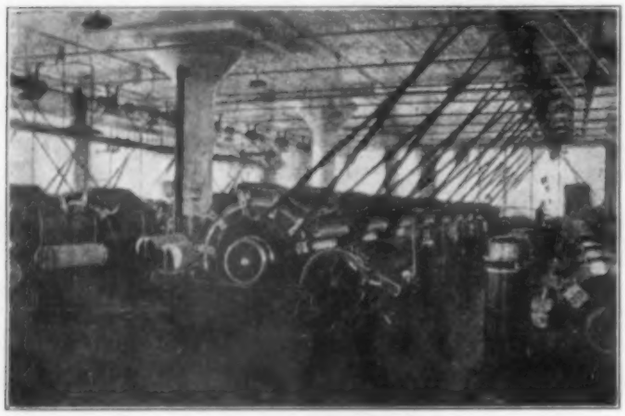


FIG. 1.

processes in the line of cotton manufacture. I wish to call your attention to Figure 1, which shows a number of these cards grouped together in the textile division. You will note at the rear of the card the lap from the picker is placed on a slowly revolving roll, the function of which is to unwind this lap and carry it through a feed roll, placing it in contact with a licker-in, so called due to the fact that it does lick in the cotton from the feed roll.

The writer realizes that it will be beyond the conception of the novice to understand to any degree the process described due to the fact that we cannot show cross sections of the various machines under description. However, this licker-in is about forty-two inches in length, covered with a saw-tooth fillet, revolving at several hundred revolutions per minute; and as it comes in contact with the sheet of cotton as it is fed through the feed roll by centrifugal force, the cotton is thrown against two knives directly under this licker-in and the clinging seed and leaf is knocked to the floor below.

From the licker-in this cotton passes on to a cylinder on the card, which is clothed with a fillet of thousands of small needle points bent at a certain angle which gives a pulling effect. Over this cylinder is a series of flats covered with needle points similar to that which I described on the cylinder and bent at a certain angle so that the flats and the cylinder are pulling in opposite directions. This action has a combing and straightening effect on the cotton fibers. The flats are revolving very slowly on an endless chain and as they arrive at the front of the card a stripping comb extending the full width of the flat, strips the collection of fiber and dirt which has been drawn from the cotton. This material so collected is waste and is rolled up by the rod directly over the flats and is removed at the proper time and sold to waste dealers.

Directly in front of the cylinder is another part of the carding engine which is called the doffer, and this is so named because of the fact that it removes the cotton that we desire to go into the process of manufacture from the revolving cylinder. This doffer is also covered with the fine needle point wire similar to that described on the flats and on the cylinder. The cotton is also stripped from the doffer by a high-speed vibrating comb, and as we see this cotton delivered by the comb it resembles in all respects a very fine spider's web, weighing from thirty-five to sixty grains per yard.

Immediately upon its delivery by the doffer comb the cotton is passed through a condensing trumpet, which is nothing more or less than a conical tube with a hole about the size of a knitting-needle. In passing through this trumpet the spider's web is condensed into a round ropelike strand similar to that shown in Figure 1.

From this point it passes through the coiler head of the card, whose function it is to coil this ropelike strand into a can which revolves in the opposite direction to the coiler head and can readily be seen in Figure 1. The timing effect and the relative speed of the coiler head and the turntable on which the can revolves are so arranged that it coils this ropelike strand in the can in such a manner that there are no tangles whatever. This feature alone has been made a subject of study for several years by textile machinery experts, until today we have a perfect timing and speed combination.

The Drawing Process

The writer wishes to call the reader's attention to Figure 2. The cans are now taken from the cards and removed to the drawing frames where, as the name implies, the cotton is subjected to a drawing process. The drawing frame is composed, among other mechanical connections of a number of rolls, four bottom and four top. The speeds of these rolls are so arranged that from the back rolls to the front rolls an increase of speed is maintained proportionate to the amount of draught to which we desire to draw the card sliver.

A little further explanation along this line may possibly help the reader. When the card sliver or ropelike strand is

FIG. 2.

delivered from the card it varies in weight more than is desired in the manufacture of good quality yarns, and in order to bring this to a degree of uniformity desired, these ends of card sliver can be doubled as many times as it is deemed necessary by the drawing frame. The most common number of doublings is six. These six ends from six individual cans are run through each delivery of drawing and converge to one strand or sliver at the delivery point of the drawing frame to the can.

(Continued on page 320)

The Manufacture of Rubberized and Rubber Coated Fabrics

By Frederic Dannerth, Ph.D.

The Rubber Trade Laboratory, Newark, N. J.

The following article will appear in two installments. The first discusses the uses for rubberized fabrics, products of the industry, raw materials, specifications, analysis of fabrics, processes of rubberizing and machines for churning cement, spreading and coating.

One of the results of the rapid development of rubber chemistry is seen in the manufacture of a great variety of rubberized and rubber coated fabrics. This industry received an especial impetus during the War because of the demand for raincoats in the army to replace the older army "poncho" familiar along the Mexican border. But this is not by any means the limitation for these fabrics, as we will find that they are also used as piano covers, hospital sheetings and table covers. When tailored they are made up into aviators' coats. One of the large opportunities for the coated fabrics has been the automobile industry, where they are used in making up the tops or covers for the cars.

The products of this industry may then be classed as:

1. Single texture fabrics, rubberized.
2. Double texture fabrics, with rubber insertion.
3. Rubber coated fabrics.

With regard to the textile materials which form the ground for the rubber compound, we will find that silk is used for ladies' raincoats, wool for men's raincoats and cotton for auto top material. Army raincoats are frequently made of cotton bombazine while high grade men's raincoats for street wear are made of a double texture fabric in such a way that the back of the fabric resembles a plaid lining while the face resembles a worsted spring overcoat. Some of these raincoats are in fact tailored in such a way that they can be turned inside out and worn so if desired.

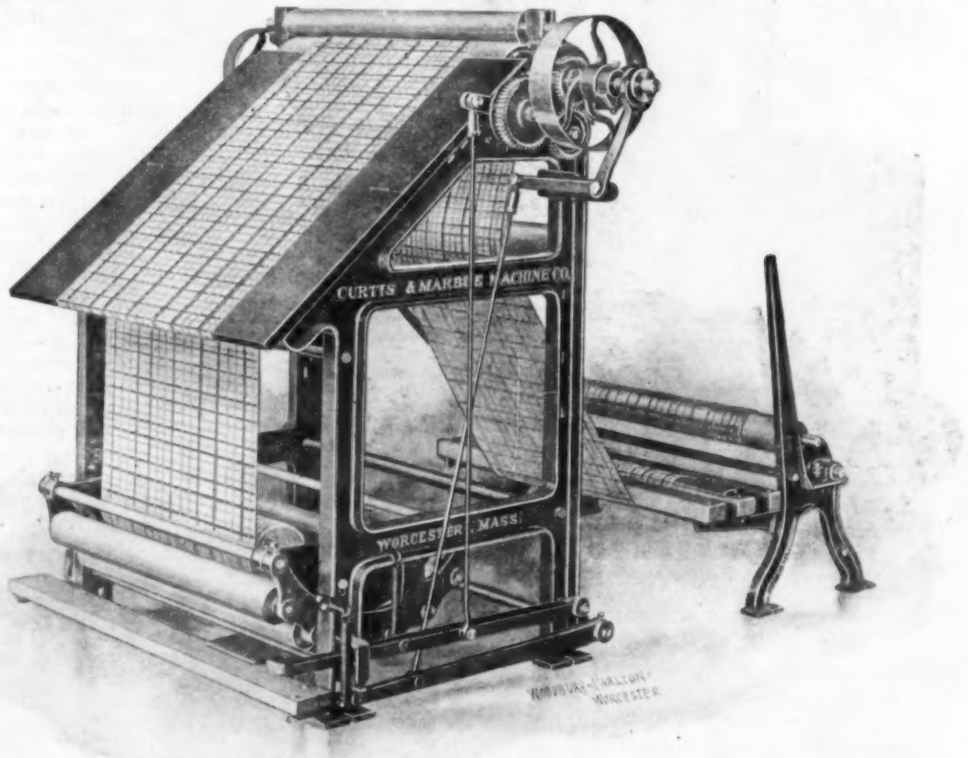


FIG. 1. CLOTH INSPECTING MACHINE

Raw Materials

The materials which enter into the rubber compound for rubberizing purposes include rubber, reclaimed rubber, sulphurized oils, pitches, accra flakes and pontianak, together with the various mineral fillers such as whiting, aluminum flake, etc.

Reclaimed Rubber. As the quality of reclaimed rubber varies to a considerable extent and the amount used in this industry is rather large, it is well to obtain from the vendor of this material a statement somewhat along the following lines:

1. State the color of the shoddy.
2. This reclaimed is made from: (state here whether it has been made from auto peelings, boots and shoes, inner tubes, etc.).
3. The specific gravity is: (this figure ought to give the rubber chemist some idea as to the amount of mineral matter in the reclaimed).
4. Free sulphur: (will indicate the extent to which the waste rubber has been freed from sulphur).
5. Organic acetone soluble matter: (will indicate the amount of resinous matter remaining in the rubber, or added to the waste rubber by the reclaimer).
6. Ash: (will indicate the amount of non-volatile mineral matter).
7. Tensile strength (will indicate the amount of actual good rubber in the reclaimed and will determine its adhesive value to a considerable degree if it is to be used for double texture fabrics).
8. Elongation: (the test specimen is stretched to the point of rupture and note is made of the total elongation to that point. A sample which will stretch from 1 to 5 inches would

be classed as very good. Both these tests are made on a sample which has been vulcanized in the laboratory).

Thinness. The socalled solvents used for thinning down the rubber compound include gasoline, benzol and carbon tetrachloride.

FIG. 2. CEMENT CHURN

Examination of Fabrics

Determination of Copper. In the purchase of fabrics intended for rubberizing, it is especially important that those containing any considerable amount of copper be rejected. The reason for this is the well known fact that copper exercises a very bad influence on rubber compounds. One of the common methods used by general chemists for this test is to weigh off 10 grams of the fabric and ash the sample in a platinum or porcelain crucible. The percentage of copper is then determined by means of the well-known copper-ammonium coloration. This method is however, *incorrect* for the following reasons: When the rubber compound is applied to the fabric it is spread over a certain area of fabric. For example:

Fabric No. 1 might weigh 4 ounces per square yard and
Fabric No. 2 might weigh 8 ounces per square yard.

If then the percentage of copper in both fabrics is reported as 0.01 per cent of the weight, we would find that

Fabric No. 1 contains 0.0004 ounces copper per square yard, and

Fabric No. 2 contains 0.0008 ounces copper per square yard; but they would both be reported as having *"not more than 0.01 per cent copper by weight"* in them by the common method of reporting. The danger of this style of calculation must be at once obvious. The only correct way, is to report the amount of copper *in a given area of fabric.*

Determination of Grease. A sample of the cloth is accurately weighed off and placed in a dry extraction flask. The flask is heated to 100° C. for one hour to expel the moisture from the fabric. The sample is then extracted with ethyl oxide (ether) for two hours in a suitable extraction apparatus. The amount of grease may be determined by the increase in weight of the flask or by the loss in weight of the sample. In any case the amount of grease in the air-dry sample should not exceed 1.49 per cent of its weight if the fabric weighs 4 ounces per square yard.

Finishing Materials. Fabrics intended for rubberizing should not be previously finished or treated with magnesium chloride as this will be decomposed by heat in the later processes and hydrochloric acid will be formed.

Inspection of cloth. In the factory the fabrics are passed through the cloth inspecting or trimming machine.

One of the preferred types of inspecting machines is that arranged with a cloth cradle, reverse motion and rolling head. This makes possible a convenient and rapid inspection of the goods either in separate cuts as it comes from the loom or in large rolls after the ends have been sewed together. The machine is built either with or without brushes. Modern types are built with more pitch to the table, and with overhanging front so that the operator can inspect the cloth more readily. The cloth cradle has wooden rolls in the bottom and will hold a roll of cloth as large as 18 inches in diameter. The cloth passes upward across the inclined table. A roller head at the rear puts the goods on rolls. The spreader bars take out wrinkles and turn the edges. The cloth may be stopped instantly in its passage by foot pressure on the treadle board in front. This acts through a friction clutch on the driving pulley. The reverse motion is important as it enables the operator to bring back to view any imperfection which may have gone beyond reach (see Fig. 1).

Processes

The various processes characteristic of the water-proofing and rubberizing industry are known as churning, spreading, vulcanizing, vapor vulcanizing, spot proofing, varnishing, impregnating and finishing.

Churning

This consists in agitating the rubber compound with gasoline as a thinner. The gasoline is pumped directly into the churn in such a way that electrification of the churn is avoided as far as possible. If many churns are operated, they should be set up with not more than six in one room, and each room should have concrete walls, twelve inches thick, well arranged to prevent the spread of fire. The gasoline used as a thinner should not be heavier than 0.730 specific gravity. It should boil from 50 to 150° C. with not more than 5 per cent boiling above that temperature. Other thinners used and frequently preferred are benzene, (benzol) sp. gr. 0.880, which boils at 80 to 81° C., and carbon tetrachloride of sp. gr.

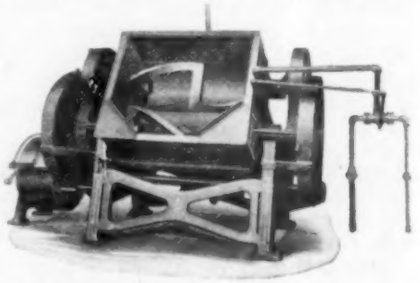


FIG. 3. CEMENT MIXER

1.63, which boils at 77° C. This last named thinner is generally out of the question on account of its high cost. The gasoline in the churn is subjected to violent agitation and this quickly produces electrification of the liquid. To obviate this it has been proposed to ground the churn and the gears. This, however, is undesirable as it tends to make the difference of electrification between any portable container and the churn much greater. This in turn would increase the intensity of the equalizing spark when passing from the container to the churn.

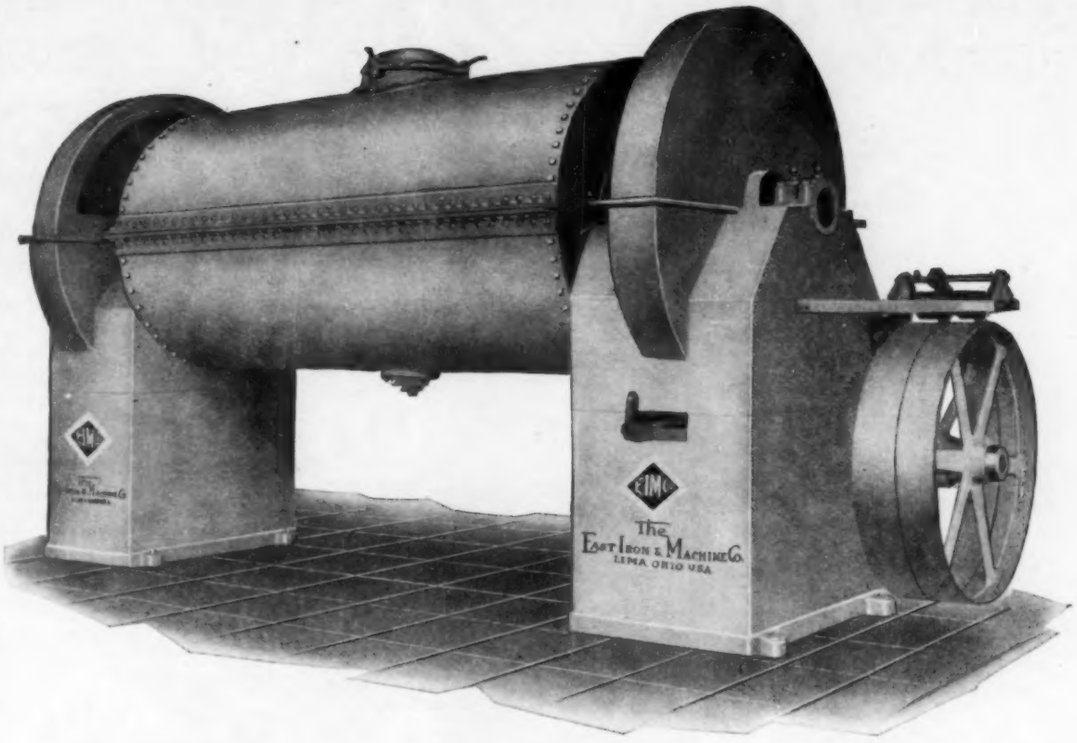


FIG. 4. CEMENT CHURN

Cement Churns and Mixers

After the rubber compound has been mixed on the mixing rolls in accordance with the prescribed recipe it is reduced to a putty or cement by mixing with a volatile liquid in a churn. In large establishments these are arranged in groups of three and operated from a main shaft. Not more than six churns should be located in any one fireproof room. An individual churn is shown in the illustrations (Figs. 2, 3 and 4).

Spreading

The cement prepared in the churns is applied to the fabric on "spreaders" or spreading machines in such a way that the goods travel in a horizontal position while the cement is poured on at one end. In order to insure a coating of uniform thickness a "doctor blade" is adjusted in such a position that all the excess cement is scraped off the fabric before it passes over the steam pipes to be dried. As the drying operation immediately follows the spreading, the evaporation of the thinner or so-called solvent gasoline takes place in the same room. For this reason care must be taken to draw off the fumes as soon as they are formed. Spreader room fires are of comparatively frequent occurrence, and when we consider that one factory may have as many as 30 or 40 spreaders in one room, the fire hazard in such cases is considerable. The knife or blade on the spreader should invariably be grounded, and good ventilation by suction draught should be installed in the spreader room. Live steam has been found to be one of the best extinguishers for this type of gasoline fire.

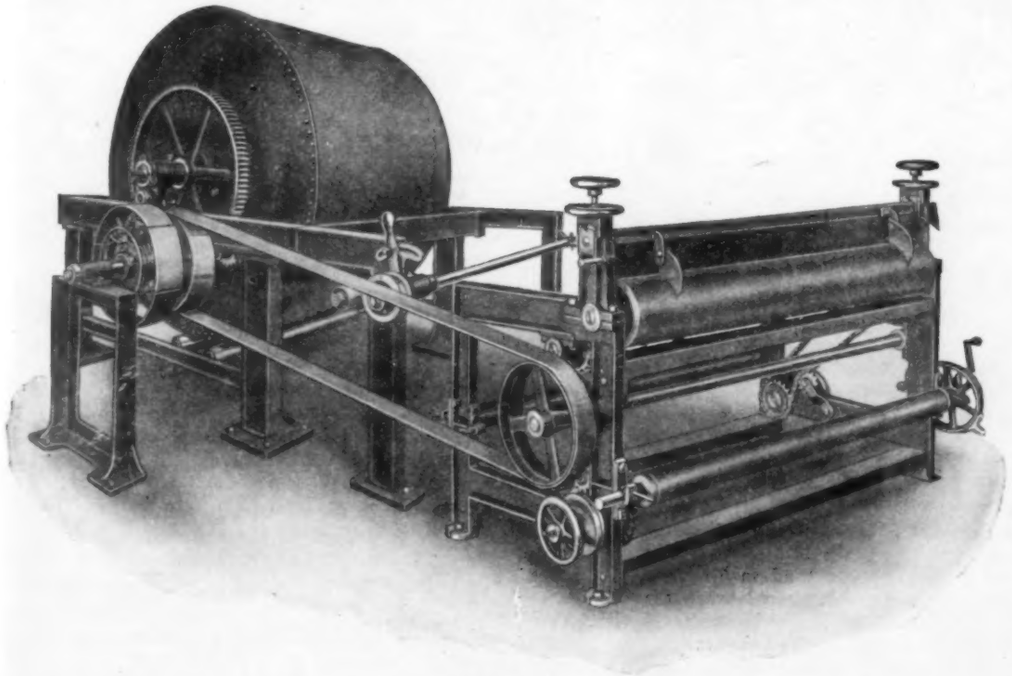


FIG. 5. COATING MACHINE AND SPREADER

The machine generally known in the rubber trade as a spreader is used in the water proofing and manufacture of many different types of fabric. Among them may be mentioned rain-coat cloths, hospital sheeting, offset blankets used by lithographers, cloth used for piano covers, auto top fabrics, dress shield fabrics and fabrics used in building up auto tires.

These machines are made with iron frames and heads. The spreader knife or "doctor blade" is made of cast

steel, and has adjustable guides to suit the width of the cloth which is to be coated. The knife can be regulated to give the desired amount of compound to the fabric. Some of the commonly used types of machines are: width 48 inches to 72 inches; length 16 feet to 20 feet. A 50-inch machine, 23 feet by 8 feet, would weigh about 4,100 pounds.

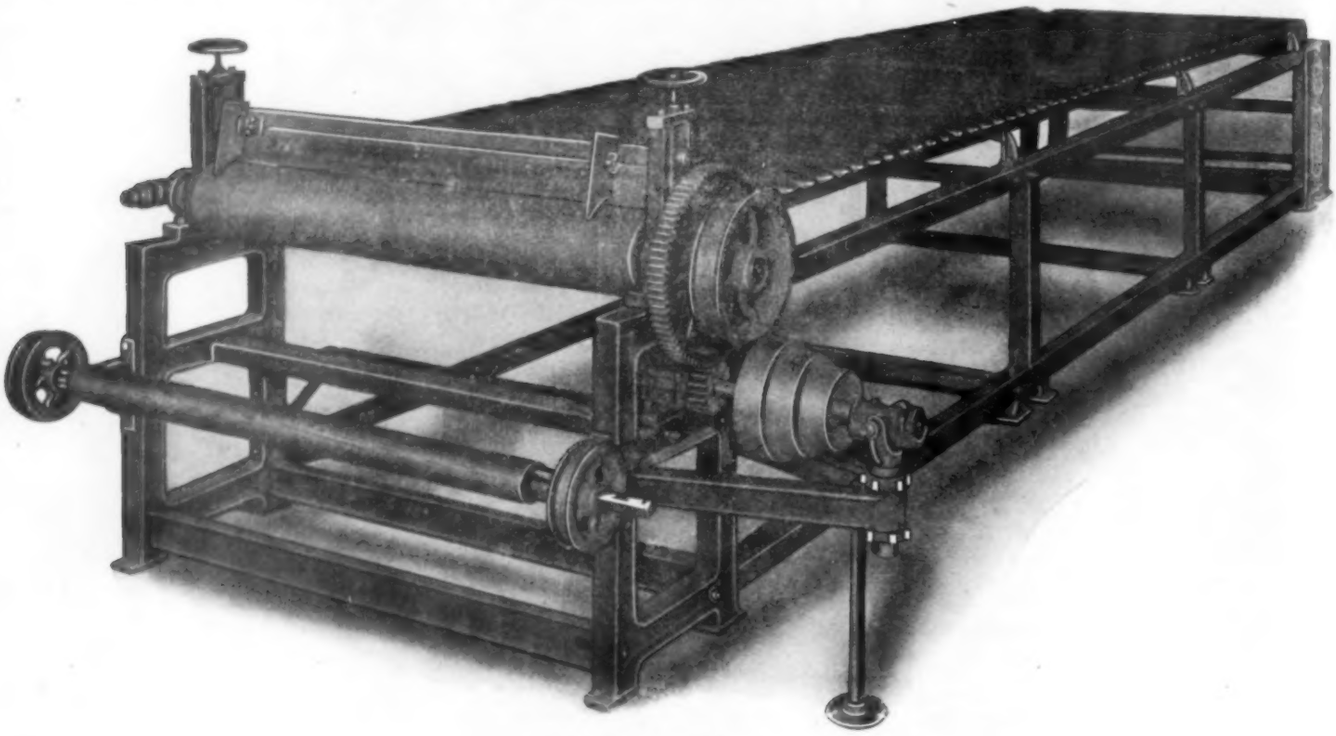


FIG. 6. COATING MACHINE

Purpose of the Machine

The purpose of the machine is to spread a thin coating of rubber or a rubber compound on a woven fabric. The cloth to be coated is wound up on a wooden roll, placed in bearings on the front of the machine, and then passed over an accurately ground rubber covered roll. The spreading is then done against this rubber covered roll by the aid of the "doctor blade". This blade or spreading knife is fastened to a knife bar, mounted at its ends in housings. It can be raised or lowered to allow for different thicknesses. The rubber compound is applied to the fabric in the form of a cement. This is prepared by mixing the rubber compound with a solvent or thinner in a churning machine. The operation of evaporating the thinner follows immediately after the spreading. The cloth passes over steam-heated coils, over a length of about 20 feet. It is then passed around a wooden drum at the extreme end of the machine and wound up on a wooden shell. The machine must be of sufficient length to allow the cloth ample time to dry in passing over the steam-heated coils. If the "speed of evaporation" of the thinner is very slow, the machine must be run at a slower speed. The cloth is brought to the spreader and hung on the "let-off" bar. This is made square to suit wooden shells and is provided with a friction drum to prevent the cloth from unwinding too rapidly. In order to prevent wrinkling of the cloth a device is used which consists of a pair of wooden rollers with shafts at a slight angle to each other (see Figs. 5 and 6).

Precautionary Measures

It is a common practice now, to have near the steam-heated coils, a series of steam jets which can be opened, in case the evaporating solvent catches fire. Ventilators should also be provided to take care of the vapors which rise above the coils.

The Making of Tire Fabric

(Continued from page 316)

In this process of drawing the combined weight of the six ends at the back of the drawing frame may be reduced at the delivery point so that the one strand at this point will not weigh any more than one of those delivered at the back, although there are six entering at the back of the frame. In other words, if the combined weight of the six strands at the back weigh three hundred grains, when these six are condensed at the front of the drawing frame the one strand will weigh only fifty grains.

There are stop motions placed on all modern drawing frames, so that if any one of these six ends should break for any reason at the back of the frame, the frame immediately stops. There is also another stop motion at the front, and if the end at the delivery point should break for any reason the same result will be accomplished.

We also have attached to this machine a yardage device which gives an absolute yardage for each and every can taken from this machine. Years ago there were three lines of this drawing used in nearly all mills, but today, after careful experiments, it has been found that one of these may be eliminated, and the most common method is to use two lines rather than three. By these two lines I wish to convey to the reader that it is simply a repetition of the same process as at the first line. The sliver delivered at the first drawing is doubled six times at the second point and exactly the same operation exists at the second line of drawing.

In the next article the writer will take the reader to the slubbers and intermediates.

(To be continued)

Annual Meeting of the Rubber Association

Members of the Rubber Association of America, Inc., Hold Annual Meeting Meeting and Banquet at Waldorf-Astoria, New York City, Monday, January 10.

Members of the Rubber Association of America, Inc., to the number of nearly one hundred attended the annual meeting of the organization which took place at the Waldorf-Astoria, New York City, on Monday, January 10. In addition to the annual meeting, which was the sixth to be held under the present charter, a number of other gatherings took place. Chief among these were the organization meeting of the board of directors of the association which followed the meeting; the twenty-first annual banquet held that evening at the same hostelry and the various divisions which were held at the Yale Club, Monday, Tuesday, Wednesday and Thursday, January 10, 11, 12 and 13.

The Annual Meeting

The annual meeting was held in the Astor Gallery and was called to order at 2:30 p. m. by President Homer E. Sawyer. It was moved, seconded and carried that the reading of the call to the meeting be omitted following which the reading of the minutes of the previous meeting were dispensed with following a motion by W. O. Rutherford.

President Sawyer then announced that inasmuch as there was no report of the president that the meeting would pass to the consideration of the report of the general manager and secretary. At this point Joseph N. Gunn arose and moved that in view of the fact that the general manager's report was in printed form and had been read by many of the members that Part I of said report be approved, accepted and placed on file. This motion was duly seconded and carried unanimously. In view of the familiarity of the members with the annual report of Treasurer William C. Cox it was moved that this report also be accepted and placed on file. The motion was carried without a dissenting vote.

Next in order of business came the election of directors. Inasmuch as there had been ten nominations to the directorate and as the election of only five was necessary the president stated that ballots would be cast and accordingly appointed George F. Hodgman, John S. Broughton and A. H. Brown as tellers of the election. The ballots were then collected and the tellers retired to count them.

The Proposed Amendment

It was stated that the next matter to be decided upon was the proposed amendment to Article XI, Section 2 of the constitution and by-laws. This change was as follows:

Annual Dues. The annual dues for affiliated members shall be twenty-five dollars ($25) per annum and for associate members five dollars ($5) per annum payable in advance on January 1st in each year. The annual dues for firm members shall include a basic fee of fifty dollars ($50) per annum payable in advance on January 1st in each year and for all manufacturing firm members an additional pro rata annual fee based upon the amount of crude rubber purchased by each of such members. The rate upon which such pro rata fee shall be based for each year or any portion thereof and the time and method of payment of such fee shall be determined by the association at its annual meeting or at any special meeting duly called for that purpose.

President Harry T. Dunn

Members elected after January 1st in each year shall pay a proportion of the annual dues for the balance of that year beginning with the first of the month following election. Members who fail to pay their entrance fees, annual dues or other indebtedness within thirty days after the same become due, shall be notified by the treasurer, and if payment is not made within the next succeeding thirty days, shall be reported to the executive committee as in arrears, and may, at the discretion of the executive committee, be dropped from the membership rolls.

At the suggestion of President Sawyer, General Manager A. L. Viles read the proposed amendment following which Joseph N. Gunn arose and moved its adoption. The motion was seconded and carried unanimously.

The President then stated that the next matter to be discussed was Part II of the report of the general manager and secretary. He went on to say that it appeared to him to be unnecessary to discuss all of the recommendations and suggestions embodied in this section of the report and that he would accordingly advise that it be referred to the board of directors for their consideration. Mr. Rutherford then suggested that the decision as to the advisability of adopting the report rest with the new incoming board of directors. Mr. Gunn seconded the motion and it was unanimously moved that Part II of the report of the general manager and secretary be referred to the incoming board with power.

(The report of the general manager appeared on page 282 of the January 10 issue of THE RUBBER AGE.)

At this point it was stated that it was provided in the amendment which had been passed that the amount of the assessment be determined at the annual meeting. Mr. Gunn then arose and moved that his previous motion be revised that the by-law be adopted and that for the year 1921 the rate upon which the pro rata fee be based should be three cents per hundred pounds of crude rubber purchased and that the time and method of payment of this fee should be in accordance with the practice heretofore employed in the payment of this fee. This was accordingly approved.

Upon the motion of F. A. Seaman a vote of thanks was extended to all the officers and directors and to the general manager and his associates for the excellent work accomplished during the year.

At this point the tellers of the election returned and upon the request of the chair Mr. Hodgman announced that the greatest number of votes had been received by F. R. Henderson, H. T. Dunn, Horace DeLisser, F. A. Seiberling and W. O'Neil. These were accordingly elected to the board of directors.

President Sawyer then stated that the meeting of the board of directors would take place immediately after the close of the annual meeting. There being no further business the meeting was adjourned.

Election of Officers

The meeting of the new board of directors took place in one of the rooms of the Waldorf-Astoria immediately following the adjournment of the annual meeting. The annual election of the officers of the association then took place with the result that Harry T. Dunn, of the Fisk Rubber Co., was elected president for the ensuing year. F. A. Seiberling was elected first vice-president and Horace DeLisser was chosen as second vice-president. Treasurer William C. Cox was chosen to fill the position for another year while General Manager and Secretary A. L. Viles was also reappointed for 1921.

The executive committee for the year as chosen at this time for the coming year was as follows: Harry T. Dunn, chairman; F. A. Seiberling, Horace DeLisser, F. R. Henderson, J. S. Broughton, Homer E. Sawyer (ex-officio).

Industrial Relations Executive Committee

A meeting of the Industrial Relations Executive Committee was held at the Yale Club, at 10:30 a. m., Monday, January 10, at which time general labor conditions and other matters of a routine nature were discussed by members of the committee.

Traffic Committee

The annual meeting of the Traffic Committtee was also held at the Yale

F. A. Seiberling, 1st. Vice-President

Club on the same day at which time a large number of important questions were the subject of discussion.

H. J. Zimmerman, of the B. F. Goodrich Co., and A. D. Phillips, of the Fisk Rubber Co., were elected to the offices of chairman and vice-chairman respectively for the ensuing year. These together with George F. Hichborn, United States Rubber Co.; John A. Moore, Ajax Rubber Co., Inc.; E. C. Webster, Hood Rubber Co.; E. L. Morgan, Miller Rubber Co., and L. H. Ley, Kelly-Springfield Tire Co., will constitute the executive traffic committee of the Rubber Association of America.

The Traffic Committee appeared before the Consolidated Classification Committee on January 11 respecting ratings and packing specifications covering several rubber articles, chief among which was the more elastic specifications for paper wrappings on tires.

Hard Rubber Manufacturers' Division

The annual meeting of the Hard Rubber Manufacturers' Division took place at noon on Monday, January 10, at the Yale Club. Trade conditions in general were discussed by those assembled and Harry Weida, of the India Rubber Co., was elected chairman of the division for the ensuing year succeeding Philip H. Campbell, of the American Hard Rubber Co.

Rubber Footwear Division

The Rubber Footwear Division held its meeting at the Union League Club, on Monday, January 10, at 1 o'clock. George H. Mayo, of the United States Rubber Co., and Francis S. Dane, of the Hood Rubber Co., were elected to the offices of chairman and vice-chairman respectively for 1921. An exceedingly interesting discussion was held in connection with present conditions in the rubber footwear industry.

Cycle Tire Manufacturers' Division

This recently organized committee met at the Yale Club on the morning of Tuesday, January 11. The meeting was primarily of an organization nature, although several other matters of interest to motorcycle and bicycle tire maufacturers were brought to the attention of the members.

Mechanical Rubber Goods Manufacturers' Division

The members of the Rubber Goods Manufacturers' Division held their annual meeting Tuesday, January 11, at 1 p. m. C. E. Cook, of the B. F. Goodrich Co., was elected chairman of the division for the ensuing year, succeeding John J. Voorhees, Sr., of the Voorhees Rubber Manufacturing Co., while C. D. Garretson, of the Electric Hose & Rubber Co., was elected vice-chairman to succeed Mr. Cook.

Rubber Sundries Manufacturers' Division

A meeting of the executive committee of this division was held at 11 a. m. on Tuesday, January 11, and this was followed by a meeting of the division at 1 p. m. In the elections which ensued Charles J. Davol, of the Davol Rubber Co., was succeeded to the office of chairman by H. A. Bauman, of the B. F. Goodrich Co., who as vice-chairman was succeeded by A. W. Warren, of the Hodgman Rubber Co.

Rubber Reclaimers' Division

The members of this division met on Tuesday, January 11, at 1 p. m. A gen-

Treasurer W. C. Cox

eral discussion was indulged in by those present in regard to the general conditions existing in the rubber reclaiming industry. F. H. Appleton, of the Appleton Rubber Co., and Clark W. Harrison, of the Bloomingdale Rubber Co., were re-elected to the offices of chairman and vice-chairman respectively.

Specification Committee, Mechanical Rubber Goods Manufacturers' Division

This committee met in the rooms of the Rubber Association of America, on Tuesday, January 11, at 10:30 a. m. Matters of a detail nature of interest to the committee were considered, following which the committee held a conference with the executive committee of the Mechanical Goods Division, the subject of which was

Horace DeLisser, 2nd. Vice-President

the future work and activities of the Specification Committee.

Rubber Proofers' Division

A meeting of the Rubber Proofers' Division was held at the Yale Club, Wednesday, January 12, at 1 p. m. General trade conditions in the rubberizing industry, as well as the subject of the cancellation of contracts in the auto topping manufacturing industry were the main topics of discussion.

At the election which took place at this time N. Lincoln Greene, of the United States Rubber Co., was elected chairman of the division for 1921. Mr. Greene succeeds Dr. L. C. Himebaugh, of the British-American Manufacturing Co. A. W. Warren, of the Hodgman Rubber Co., was chosen vice-chairman, succeeding Warren McPherson, of the Cambridge Rubber Co.

Foreign Trade Division

A meeting of the Foreign Trade Division, which proved particularly interesting because of the contemplated organization of a Foreign Trade Department in the Rubber Association of America, was held at the Yale Club at 1 p. m., Wednesday, January 12.

C. A. Wilson, of the Dural Rubber Corporation, was elected chairman of the division to succeed A. R. Gormully, of the Ajax Rubber Co., Inc., while R. H. Daniels, of the Goodyear Tire & Rubber Co., was elected vice-chairman to succeed A. W. Magee, of the Kelly-Springfield Tire Co.

Tire Manufacturers' Division

The annual meeting of the Tire Manufacturers' Division was held at the Yale Club at 1 p. m., Thursday, January 13,

and this was immediately preceeded by a meeting of the Executive Committee of that body in the rooms of the Rubber Association.

As the result of the elections which ensued the following were chosen as officers and members of the executive committee for 1921: Chairman, Seneca G. Lewis, Pennsylvania Rubber Co.; vice-chairman , Joseph C. Weston, Ajax Rubber Co., Inc., Executive Committee: Pennsylvania Rubber Co., Ajax Rubber Co., Inc., Kelly-Springfield Tire Co., Hood Rubber Co., Fisk Rubber Co., Miller Rubber Co., Portage Rubber Co., Lee Tire & Rubber Co., Swinehart Tire & Rubber Co., Firestone Tire & Rubber Co., Empire Tire & Rubber Co., United States Tire Co., B. F. Goodrich Co., Goodyear Tire & Rubber Co., Star Rubber Co., Mohawk Rubber Co. and the New Jersey Car Spring & Rubber Co.

The Twenty-first Annual Banquet

The twenty-first annual banquet of the Rubber Association of America which was held at the Waldorf-Astoria, on the evening of Monday, January 10, may be justly regarded as one of the most successful affairs of its kind ever held in the annuals of the organization. All factors combined to make the dinner long to be remembered in the minds of those who were fortunate enough to be in attendance. Menu, music, decorations, and the spirit of conviviality and good-fellowship all united to produce the final result of satisfaction which filled each and every member and guest present. The post prandial program was excellent and fully in keeping with such programs of previous banquets. The speakers were the Hon. Simeon D. Fess, United States Representative from Ohio; the Hon. Pierre E. Blondin, Postmaster General of Canada, and the Rev. Nehemiah Boynton, D. D. In all respects the event fully repaid the labors expended by the dinner committee which consisted of Horace De Lisser, chairman; A. W. Warren and C. W. McLaughlin. Incidentally over 800 were in attendance.

Seven o,clock was the hour set for the beginning of the festivities and shortly after that time the vanguard of prospective diners appeared. Hats and coats having been disposed of for the time being one and all repaired to the Astor

J. Newton Gunn

Gallery where an informal reception was held for upwards of three quarters of an hour. The reception committee consisted of J. V. Mowe, chairman; F. E. Dayton, George A. Ludington, A. Boyd Cornell, H. H. Durr, Edgar H. Wilson, John T. Christie, Walter H. Jenks, A. A. Garthwaite, John de C. Van Etten, William T.

General Manager A. L. Viles

Cole, H. A. Astlett, Charles T. Wilson, H. W. French, L. J. Plumb, Russell W. Earle, W. T. Baird, Edward E. Huber, C. J. Welch, R. J. Stokes, T. M. Gardner, J. H. Kelly, H. H. Henderson and W. E. Wilson.

Shortly before eight o,clock the doors of the grand ball room were thrown open and a bugler sounded the call to the banquet. The diners then filed into the great room and in a short time were seated at the seats assigned to them. The national colors were prominent in the scheme of decoration and were to be seen on all sides. The wall behind the president's table was a veritable blaze of color and was completely covered with American flags of various sizes. Directly behind the president's chair were two great flags and superimposed upon them was the Canadian ensign, a tribute to the Postmaster General of Canada. On either side were small blue silk flags one bearing the arms of the State of New York while the other showed those of Manhattan. The tables themselves bore tall vases of flowers which served to add to the general decorative effect.

As the diners reached their appointed places an orchestra in the balcony broke into the strains of "The Star Spangled Banner" and one and all joined in the singing.

Following the singing the waiters appeared and for over an hour one and all gave their entire attention to the following menu:

CAPE COD OYSTERS
CHICKEN GUMBO, A. La Creole
Celery Radishes Olives
MEDAILLON OF SEA BASS, JOINVILLE
Potatoes Parisienne, Rissolee
SWEETBREADS, MONTEBELLO STYLE
Green Peas Saute in Butter
BREAST OF CHICKEN STUFFED
Paprika Sauce and Timbale of Rice
Waldorf Salad, Mayonnaise Dressing
FANCY ICE CREAM
Macaroons Assorted Cakes Lady Fingers
COFFEE
White Rock
Cigarettes
Cigars

Those seated at the president,s table were as follows: John W. Maguire, Wm. C. Cox, Augustus C. Bourn, A. H. Brown, A. D. Thornton, C. C. Hauch, C. H. Carlisle, Col. J. G. Vincent, the Rev. Nehemiah Boynton, D. D., Harry T. Dunn, the Hon. Simeon D. Fess, Homer E. Sawyer, the Hon. P. E. Blondin, Col. Samuel P. Colt, H. S. Firestone, George B. Hodgman, C. E. Thompson, John S. Lowman, Merrell E. Clark, John S. Broughton, William J. Kelly, W. O. Rutherford and Charles J. Davol.

Ex-President Sawyer's Address

When the coffee had been served and cigars had been lighted Ex-president Homer E. Sawyer arose and addressed the assemblage as follows;

W. O. Rutherford

Ladies, Guests, Members of the Rubber Association of America: For the past two years I have been privileged to serve you as president of this association, but only a few hours since, your newly-elected board of directors have very

properly demoted me and elected as your President for next year, our genial and able friend, Mr. Harry P. Dunn.

Obviously, as this is my last chance to address you, I should take the opportunity to deliver a prolonged valedictory, but don't be worried, I am not going to. I have no desire to long keep you from the words of wisdom that are to follow from our guests of the evening.

I must, however, briefly alude to what you have done during the past two years, to your contribution to the success of the association, and to thank you one and all for your unfailing and wholehearted support. Your enviable financial position is due to the broad-minded spirit of all the manufacturers of this associaton who have adhered to the informal agreement to pay three cents per 100 pounds on all rubber purchased, and this, together with your views, has placed your directors in a position to pay all necessary expenses, to make certain proper contributions, to add materially to your invested reserves and leave a very comfortable cash balance on hand. Your numerous sub-committees have been indefatigable in their work for the welfare of the Association and have with the utmost vision and unselfishness worked together for the good of all, and all of the work has been concentrated and centralized under our able General Manager, Mr. Viles, and his able staff.

Your business represents a magnitude of something considerably over a billion dollars annually, and business of such magnitude the products of which are necessary to nearly all of the other industrial life of the country, has a distinct duty to perform along progressive and co-operative lines, and we do not know how it can be best done except with the aid of a helpful and aggressive association.

Under the wise leadership of the few, none of us have any doubt of our realizing our fondest hopes and aspirations for the Rubber Association of America.

Gentlemen, I am going to proceed to the introduction of our guests of the evening. One of our speakers—not the next speaker, but one of our speakers—has asked me to explain that he was born in a French country and that the English language is a little difficult for him in a large audience. Consequently, I will ask you to be particularly considerate while he is speaking.

Since 1917 when our nation was drawn into the World War there has been a new sympathy between business and legislation, a new intimacy and understanding between those who enact our Federal laws and those business interests that are so largely affected by our statutes. The law legislator, we believe, has a wider sympathy with the legitimate requirements of commerce, and the world of business has begun to realize that participation in government and cooperation with governmental agencies are essential if our democracy is to progress.

Because of this new and hopeful and wholesome relation between the nation and the nation's capital, we are glad to welcome tonight a gentleman who ably represents that growing force in national affairs which justifies our faith in the future cooperation of business and legislation.

A scholar by training and profession, an effective worker for good government by temperament and ability, five times called from college activities to assume his seat in the House of Representatives in the United States, the master hand in moulding the new and model constitution of his native state, one of the strongest advocates of intelligent tax revision, a dominant figure among his colleagues. I am honored in presenting the Honorable Simeon D. Fess, Congressman from Ohio.

Address of Hon. Simeon D. Fess

The Hon. Simeon D. Fess delivered an excellent address upon the present day problems facing the business men of America. He declared himself to be strongly in favor or a general reduction of the expenses connected with the administration of government. He also spoke against the present system of taxation and stated that he was heartily in favor of having the existing condition of affairs remedied. With respect to the future of the rubber business the speaker said that the facts were self-evident that the business would continue to grow and become more prosperous with the passage of time. He said in part:

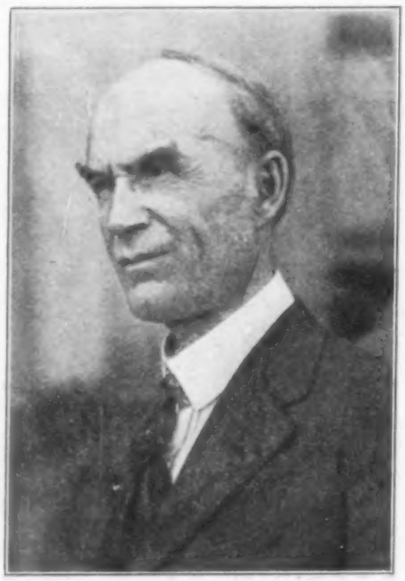
Mr. Chairman, ladies and gentlemen: I am here in response to the request of a friend who desired that I speak briefly upon the business situation as it appears to a legislator and I accepted the invitation without any hesitancy because I am one of the numerous members who believe that we ought to carry the consideration of public questions out of the chamber of legislation to the people who really represent the thought of modern business.

We are now in the midst of readjustment, and the problem is geting from a world stage to a business basis. We have been upon a very high cost level. We would like to get down if possible without danger.

The liquidation of the war is inevitable; it must come—and how it can come without disaster is not only the problem of the legslator but it is the problem of every business man in the land.

The speaker then went on to discuss the seven steps which had led to the wave of high prices throughout the country. He told how the price of labor had been forced up owing to war time conditions.

He then proceeded to comment upon the recent statement of the Secretary of the Treasury to the effect that it would



Hon. Simeon D. Fess

take four billions of dollars annually to run the affairs of the Government for some years to come. He stated that if the cost of government could not be reduced below this figure it would result in an extremely severe burden for the business world and went on to say that in his opinion the cost should be decidedly reduced.

The speaker went on to say that the various departments of the Government should be reorganized; that a budget system should be adopted; that the customs duties be revised to the end that more revenue be obtained via imports. He stated that the adoption of a form of sales tax was at the present time an open question and that a wide difference of opinion upon the subject existed in Congress. He scouted the suggestion of the adoption of the turn-over tax and stated that the best system was that of a final tax upon sales.

The Congressman from Ohio declared himself as opposed to the present unscientific excess profits tax and stated that he could no longer see the necessity of continuing the high ranges of the income tax in the upper ranges and intimated that the new adminstration would possibly take a decided position on these questions.

Commenting upon the future the speaker stated that there was no reason for losing faith in the future. We have wonderful crops, he stated, the transportation situation has improved remarkably and there is a far better understanding between the forces of capital and labor than existed several months ago. In addition to this the peril of bolshevism was on the wane and the danger point had been passed in the attempt to sovietize labor. In addition he predicted an ever increasing sphere for the activities of the American merchant marine.

In speaking of the future for the rubber industry he said:

Gentlemen, there isn't anything, in my judgment, surer than the perpetuation of the rubber industry which has, in a large degree come to be so basic that you might call this the Rubber Age, as a few years ago we would speak of it as the Electric Age.

Our industries, our whole industrial life has been colored by new developments along the line of this industry—and if, now and then, we see some evidences of a slacking of business—and I wouldn't be surprised if in the slumps there would not be some severe suffering—yet, what about the eight million of motors that have determined what largely our thought in business will be.

What about the 1,500,000 motors required for replacement every year when we are filled to our fullest capacity and could not reach over two million. What about the upkeep necessary to run those already manufactured?

Why the rubber business must go on or civilization could not go as it now is. Nothing is more certain than that.

In my judgment there is not anything more certain than that. So the outlook is not gloomy. The outlook is wonderously auspicious. We are going to enter upon a construction era. We are retarded because of the cogging of the current of business.

Europe, said the speaker, is not yet upon her feet and in all probability would not approach normalcy until the Allies fix upon the nature and extent of the indemnity Germany must pay. When the indemnity is fixed, he stated, Europe would return to work and so would Germany. For our own part he predicted peace with Germany with the advent of the new administration.

He then stated that he thought that there should be no more interference on the part of Congress in the matter of prices and that it should be the duty of the legislative branch to get the Government out of business and let private enterprise have a chance.

In concluding he said:

Consequently, I come to you with this message: First, let the Government cut as far as it can. Secondly, take immediate steps against further extravagance; thirdly, revise the taxation system and do away with that sort of system of tax that penalizes business and is built upon the position that any man who had succeeded must have been dishonest.

And then, after the Government has done that, taking its hands off business, let the people, of whom you represent a magnificent group, have faith and confidence and look to the future. And the moment that you begin to have confidence in the future and invest your money, labor will be employed, capital will be invested, and in my judgment we are going to enter upon one of the greatest eras of business this Nation has ever seen.

Address of Hon. P. E. Blondin

At the conclusion of the address, which was warmly received and heartily applauded, Mr. Sawyer arose and introduced the second speaker of the evening, the Hon. Pierre Edward Blondin, Postmaster General of Canada. He said:

After the untold sacrifices endured in the Great War, in which your American people rendered to the world and civilization such vital service, and at a time when everyone, whether he be a friend or a foe is looking to the future with the hope that such days as the present generation has seen shall never rise again upon humanity, is it not a great comfort to sit together, Americans and Canadians, and to congratulate ourselves on the splendid page of peaceful history that the past has written for both of us?

To use the words of that most distinguished Canadian statesman, Sir Robert Borden, I might say: "In the boundary between Canada and the United States, unfortified for more than a century, save by a common trust which has never been violated, and in the intimate friendship which that just confidence has mantained and strengthened, we have given to humanity a lesson which ought never to be forgotten in the determination of the peace of the world."

That our two nations, each in its sphere of influence, may always continue to set that example and work in every way for peace on earth, is the desire that I can safely express here tonight for the Government and for the people that I have the honor to represent.

He then went on to tell of Canada and his own province of Quebec, discussing its growth, government and opportunities and concluded as follows:

When we see the results of half a century, notwithstanding obstacles that seemed insurmountable, when we compare our inhabited territory with what it was forty years ago, when we think of the large railway lines covering the whole country from one ocean to the other and the many steamers carrying our products on all the seas, when we realize the prosperity of the nine Canadian provinces, need I tell you, ladies and gentlemen, that we feel in our hearts flowing as if the source of energy and perseverance, all patriotism which produced all these results, and that we feel ourselves only at the starting point of a progressive march toward greater achievements, making us your worthy and your friendly neighbors.

When the applause had died away Toastmaster Sawyer arose and introduced the final speaker of the evening, the Reverend Nehemiah Boynton, of Brooklyn.

Dr. Boynton's Address

Mr. Boynton's address was of an exceedingly humorous nature and evoked round after round of laughter and applause. He said in part:

There are two great things which everybody, and especially businessmen ought to have their eyes on just at this present time, and the first is, that there is a new spirit and a new demand for common, plain, old-fashioned ethics in this world of ours.

The new demand for new ethics in the world, the professional as well as the business world, is one of the hopeful signs for the future of our country and the world in these depressing days, for, as has been said, and we remember the saying, gentlemen, in spite of everything, the Ten Commandments are not obridged, and stealing will continue.

Now, the other thing which is to be seen in the larger life of the world that we all ought to get our eye on is a new appreciation of the principl e of neighborliness in the world. No man is such a consummate jack-ass in this day and generation as the man who undertakes to make you believe that you can build a high fence around the United States of America, and allow the rest of the world to go hang and let America proceed to glory.

Continuing he said that the nations of the world were becoming more dependent upon each other with the passage of time. Modern methods of transportation and communication have bound them closer together than ever before until some insignificant happening on one side of the

Rev. Nehemiah Boynton, D. D.

globe will have a profound effect upon the inhabitants of the other hemisphere. He then went on to say:

So, my two words are these, just there: We ought to be able to see beyond our own individual interests and understand how mightily necessary it is today to accentuate in America the good old-fashioned principle which we learned at our mother's knees of ethics, that honesty is the best policy, and that only as honesty is at a premium in business life can business be either safe on the one hand or in any helpful way largely improved upon the other; and then the second thing, that the principle of neighborliness binds your life to the life of the man who is farthest away from you on this terrestrial sphere that what affects him will inevitably affect you, just as it is true that if the Red Cross was not fighting in middle Europe today, with its splending serried columns of sympathy and of love that tremendous typhus fever, it would come as surely as the days would dawn and find its expression horribly and awfully in our own country. They are fighting our battles for us, and it makes a mighty big difference to you gentlemen here in America is being supported and is being able to keep her benevolent and philanthropic troops there working for us or whether by the scarcity of the treasury they must be recalled and the typhus fever advance.

But I have already spoken too long. One word and I am done. Somebody says there is a depression around. Well, maybe there is. You can not have a country without having valleys as well as hills. But did you ever own, if you ever were able to own or hire an automobile, any of you men, and take a ride out into God's country—maybe you did not hire it but just borrowed it from the people you are working for, but at any rate did you ever ride out into the country and did you ever notice that what gave your landscape grace, symmetry and beauty was not that it was a dead level plain, but after you had risen through struggle to the summit of a hill, and perhaps had descended into a valley, another hill waited for you, and conquering that with your machine, when you stood upon its shining pinnacle, the view seemed better than any other view you had ever seen. That is the way with business. It is the way with my business, I know, and I suppose it is with yours. There may be depression today, but, oh, buck-up, buck-up, there is going to be a conquered mountain pretty soon in our American business world. And if we have ethics that are keen enough, and we have, and neighborliness that is generous enough, and we have, we shall not only share the view but divide the profit.

Let me close by quoting an epitaph from a tombstone—not for the purpose of increasing the depression, but for the purpose of disseminating it.

Thousands of years ago, nearly three thousand years ago, this inscription was put upon an old Greek tomb-stone:

"A shipwrecked sailor buried here bids thee sail full many a gallant ship. Where he was lost outlived the gale."

Outlive the gale, men, outlive the gale. Don't get under the tomb-stone.

At the conclusion of Dr. Boynton's address, Ex-President Homer E. Sawyer arose and bade one and all good night. The twenty-first annual banquet of the Rubber Association of America was over.

Those Present at the Banquet

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The Annual Banquet of the Rubber Association of America

Held at the Waldorf-Astoria, New York, Monday Evening, January 10

The twenty-first annual banquet of the Rubber Association of America, Inc., which was held in the grand ball room of New York's most famous hostelry, proved to be the industry's premier social event of the year. Over eight hundred members and guests were in attendance and enjoyed to the fullest capacity the excellent menu, music and post prandial program. Addresses were delivered by the Hon. Simeon D. Fess, United States Representative from Ohio; the Hon. Pierre E. Blondin, Postmaster General of Canada, and the Rev. Nehemiah Boynton, D. D., of Brooklyn.

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Tire Requirements for 1921

Automobile tire requirements for 1921 are of interest to every motorist. According to a recent estimate, there are eight million motor cars in this country. As each of these requires four tires in service and at least one spare, there are forty million tires in actual use. Estimating that each of these eight million cars will require at a minimum, three new tires during 1921, we have a replacement demand for twenty-four million tires.

New car manufacture in 1921 is estimated at approximately two million cars. Here we have an additional demand of ten million tires. Thus minimum 1921 requirements are not less then thirty-four million tires.

NEWS OF THE INDUSTRY

News -- Personals -- Financial -- Building Activities -- New Products

Raincoat Trade Sets Standards

A meeting full of importance to the rubber garment trade and to the cotton converting industry took place on January 6 at the offices of Alfred L. Helwitz & Co., Inc., a firm specializing in converting for the rubber trade exclusively, at 220 Fourth ave., New York City. Representatives of dyestuff manufacturers, dyers, rubber chemists, rubberizers and rubberized raincoat manufacturers attended the meeting which was for the purpose of obtaining a full and complete discussion of the question of dyeing and finishing goods for the rubber industry and to eliminate in the process of manufacture of dyestuffs and in the dyeing of fabrics ingredients which when brought into contact with rubber cause deterioration.

The most satisfying results were obtained through this conference and the following resolutions were adopted:

Copper should not be present in fabrics for rubberizing purposes, and in the test if any blue color is obtained from a 10 gram sample after incinerating and is dissolved in nitric acid and treated with ammonia, the copper might be considered in excess.

It was decided that chrome can be allowed as an oxide.

Samples tested by leeching out with water should not show presence of chromates or chromium salts.

That a committee representing dyers, converters, dyestuff manufacturers and rubberizers be appointed to cooperate and make the necessary tests determining the effect of chromium compound upon rubberizing.

It was decided that manganese be eliminated. Tests for manganese to be as follows: That when a 10 gram sample of cloth is ignited and fused with sodium carbonate no green coloration should be noted.

It was agreed that vanadium should not be used in the dyeing of merchandise for rubberizing.

It was decided that no restriction be placed upon iron pending a series of experiments similar to those for chromium.

It was decided that ether extracts should not show an excess of 2 per cent in the fabrics dyed and finished for rubberizing purposes.

Dr. Cohoes, of Jos. Bancroft & Sons, who acted as chairman, appointed the following committee: Dr. Montalent, of H. A. Metz, representing dye manufacturers; Mr. Warner of the Bronx Company, representing finishers; Mr. Helwitz of Alfred Helwitz & Co., representing converters; Mr. Mitchell of the Vulcan Proofing Company, representing rubberizers.

Through this conference it is expected that a standard formula will be adopted which will be of inestimable value to all concerned.

Change of Address

Beginning February 1, 1921, THE RUBBER AGE offices will be located at 225 Fourth Ave., New York City. All communications either of an advertising or editorial nature should be sent to that address.

New Directors of M. & A. M. A.

At the annual meeting of the Motor and Accessory Manufacturers Assocation held in New York, January 12, F. C. Glover, vice-president and general manager of the Timken Detroit Axle Company, Detroit, Mich., and H. L. Horning, secretary and general manager of the Waukesha Motor Company, Waukesha, Wis., were elected to the board of directors. They succeed C. Girl, president of the C. G. Spring Company, Kalamazoo, Mich., and E. W. Beach, general manager of the Ferro Machine & Foundry Company, Cleveland, Ohio, who have been identified with the association both as members and directors for a long period of years.

Two members of the board whose terms expired this year were re-elected: E. H. Broadwell,

The board of directors is now constituted as follows: E. H. Broadwell, vice president, The Fisk Rubber Co., Chicopee Falls, Mass.; E. C. Thompson, president, Steel Products Co., Cleveland, Ohio; W. O. Rutherford, vice-president, B. F. Goodrich Rubber Co., Akron, Ohio; L. M. Wainwright, president, Diamond Chain & Mfg. Co., Indianapolis, Ind.; G. Brewer Griffin, Westinghouse Elec. & Mfg. C., E. Pittsburgh, Pa.; J. M. McComb, vice-president, Crucible Steel Co. of America, Pittsburgh, Pa.; G. W. Yeoman, treasurer, Continental Motors Corp., Detroit, Mich.; A. W. Copland, president Detroit Gear & Machine Co., Detroit, Mich.; C. H. L. Flinterman, vice-president, Detroit Pressed Steel Co., Detroit Mich.;E. P. Hammond, president, Gemmer Manufacturing Co., Detroit, Mich; M. L. Horning, secy. and gen. mgr., Waukesha Motor Co., Waukesha, Wis.; F. Glover, vice pres. and gen. mgr., Timken Detroit Axle Co., Detroit, Mich.

Akron Factories Resume

Akron rubber companies have resumed operations after being closed for the Christmas holidays with every indication pointing to increased production, gradual absorption of the city's unemployed, and a steady return to conditions approaching normal in the tire industry.

It is stated authoritatively by manufacturers that the city's rubber and tire concerns start the new year with fully $50,000,000 worth of new business on their bboks for January delivery. This estimate is conservatively made, and is likely to be exceeded when all January orders are compiled it is stated.

This, according to business men of the city, is the most encouraging note in the tire industry that has been sounded since the period of retrenchment began last summer, and indicates a condition approaching normal, for the total value Akron products last year, as compiled by the Chamber of Commerce, was approximately $640,923,000 for a monthly average of about $53,410,000.

Heavy January orders will not mean an immediate resumption of normal factory operations, however, it is stated, as practically all companies have a surplus of finished products on hand sufficient to handle all January deliveries. But with orders continuing to increase, as they have since December 15, manufacturers say, the surplus will be rapidly worked down, and will demand greater production effort at least by February 15, in order to keep production apace with demand.

According to A. A. Berry, superintendent of the state-city employment bureau, there still are about twenty-five applicants for every available job in the city, with only about forty of every 1,000 applicants being placed daily. Mr. Berry estimates the number of unemployed in the city to be substantially the same as a month ago, 20,000.

The B. F. Goodrich Co. has taken on a number of former employees, and increased factory working hours. Firestone also increased its main shift by two hours. Goodyear reports business increasing to such an extent as to indicate an early necessity for increased production, but under the company,s present temporary financing program, it is impossible to increase the pay roll, it is understood.

With consummation of the permanent negotiations for financing of $50,000,000, it is stated, the company will be able to increase factory hours, put on more men and put through larger production tickets. The Goodyear Co. has fully $15,000,000 worth of business booked for January delivery.

Akron's unemployed will be absorbed before any outside labor is employed, manufacturers emphasized.

New Tread Elects Officers

The New Tread Tire Company's second annual stockholder's meeting was held at the company's office in Columbiana, Ohio, January 10 at which time the following directors were elected: S. W. Tidd, C. V. Calvin, Eric P. Altenburg, C. R. Heck, O. W. Altenburg, S. J. Heck, W. O. Wallace, E. L. Dieffenbacher and R. F. Luce. These in turn elected the following officers: S. W. Tidd, president; C. V. Calvin, secretary and treasurer; and Eric P. Altenburg, vice-president and general manager.

The New Tread Tire Company has enjoyed a very successful year. Sales showing an increase of 100 per cent over the previous year and with new additions practically completed the company will be in a position to triple their 1920 business the coming year.

Harvey Heads Export Department

The export business of the India Tire & Rubber Company of Akron, Ohio, has reached such proportions as to necessitate the establishment of an export department. The new unit will be in charge of Lynn Harvey, of Akron.

Mr. Harvey brings to his new duties the experience of a good many years spent in the export business. He was formerly assistant export manager for the Miller Rubber Company, of Akron, with which organization he was connected for three years. For six years previous to that he was with the H. K. Porter Company, Pittsburgh's well known locomotive manufacturers.

Mr. Harvey returned about two months ago from a year's trip abroad in the interests of the Miller Company. He

LYNN HARVEY

covered Australia, Tasmania, New Zealand, and Hawaii, and reports business very good in those regions.

Miller Cuts Common Dividend

Miller Rubber Co. has declared a quarterly dividend of 1 per cent on the common stock payable January 20 to stock of record January 1. Previous quarterly rate was 2 per cent.

E. B. McKay Vice-President of Inland

E. B. McKay was elected vice-president and general manager of the Inland Rubber Company, Chicago, by the board of directors, at their annual meeting December 29, 1920.

Mr. McKay associated himself with the Inland Rubber Company about a year ago, previous to which time he had been first vice-president of the Empire Tire & Rubber Corporation, Trenton, N. J., with which concern he had been identified in various executive capacities for a period of sixteen years.

Mr. McKay has a wide, varied experience in the rubber industry, and a very large acquaintance throughout the country.

I. J. Cooper Promotes Cook

The I. J. Cooper Rubber Co. of Cincinnati has recently appointed H. M. Cook as manager of the Columbus branch. Mr. Cook has been connected with this branch for the past two and one-half years, as office manager and credit manager, and later as district auditor covering branches at Columbus, Dayton, Toledo and Cleveland.

Firestone Rim Plant Progresses

The new rim plant of the Firestone Steel Products Co. at Akron, is expected to be ready for occupancy in the early spring, it is announced at the company's offices. Installation of machinery has delayed use of the plant, it is said.

Treasurer's Report—The Rubber Association of America

GENERAL FUND—YEAR ENDING DEC. 31, 1920

INCOME

Firm Dues	$ 19,618.99	
Affiliated Dues	939.62	
Associate Dues	1,191.40	
Initiation Fees	975.00	
Interest on Investments	6,169.16	
Interest on Deposits	1,195.58	
Fees from Manufacturers	136,795.05	
Arbitration Committee	241.67	
Total Income		$167,126.47
Deduct Expenses (Exhibit B)		125,146.12
Net Income		$41,980.35
In Fund January 1, 1920	$120,233.73	
Deduct direct charges during 1920	567.80	
		119,665.93
Balance in Fund December 31, 1920		$161,646.28

EXPENSES

Office Salary	$ 36,531.79	
General Miscellaneous Expense	5,474.16	
Traffic Division	16,492.87	
Annual Dinner, 1920:		
Expenses $9,251.90		
Receipts 7,968.00		
	1,283.90	
Annual Outing, 1920:		
Expenses $7,282.81		
Receipts 3,206.60		
	4,076.21	
Rent	8,181.32	
Stationery and Printing	5,556.30	
Postage	2,214.75	
Telephone and Telegraph	2,059.08	
Auditing and Statistics	1,699.50	
Legal Expense	3,818.21	
Overtime Expense	822.78	
Dues and Subscriptions	23,028.56	
Repairs	287.25	
Tire Manufacturers' Division	2,195.03	
Rubber Clothing Manufacturers' Division	588.69	
Mechanical Division	821.13	
Rubber Proofers' Division	1,705.54	
Footwear Division	208.47	
Mechanical Specification Committee	522.31	
Tax Committee	127.25	
Industrial Relations Committee	1,275.40	
		$118,470.50
Depreciation on Bonds (to Market value December 31, 1920)	$5,578.75	
Depreciation on Furniture and Fixtures (10 per cent of $10,968.73	1,096.87	
		6,675.62
Total Expenses		$125,146.12

BALANCE SHEET—DECEMBER 31, 1920

ASSETS

Cash in Bank and on Hand		$ 24,366.24
Investments	$136,961.25	
Less Depreciation	9,691.25	
		127,270.00
Furniture and Fixtures	$10,968.73	
Less Depreciation	7,043.84	
		3,924.89
Guaranty Trust Co. (London Branch)		7,047.99
Baling Presses		24.00
Accounts Receivable		970.86
Accrued Interest on Investments		1,363.19
Annual Banquet (1921) Expense		141.44
Total Assets		$165,108.61

LIABILITIES

Arbitration Committee	$ 100.00
Associate Dues paid in advance	5.00
Annual Banquet (1921) Receipts	8.00
N. Y. State Income Tax Withheld	35.42
Unexpended Division Funds (as follows)	3,313.91
General Fund	161,646.28
Total Liabilities	$165,108.61

Bonds owned, market value, December 31, 1920

Par Value	Cost	Market
$151,000.00	$136,961.25	$127,270.00

Summary of Division Funds

Division:	Balance January 1, 1920	Disbursements	Balance December 31, 1920
Rubber Sundries	$1,530.83	$ 369.69	$1,161.14
Rubber Reclaimers	326.62	285.75	40.87
Hard Rubber Manufacturers	259.02	51.65	207.37
Rubber and Fibre Sole	110.85	.....	110.85
Rubber Proofers	508.23	508.23	.....
Foreign Trade	3,056.48	1,262.80	1,793.68
Total	$5,792.03	$2,478.12	$3,313.91

News from the Rubber Metropolis

Optimism Revives in Akron—Industrial Activity in Rubber City on the Increase—Portage Refinancing Approved—Mason Tire & Rubber Co. Issues Statement

Optimism Revives in Akron

(Special Akron Correspondence)

The feeling of optimism which showed first signs of revival in Akron rubber circles in December, became more pronounced with the advent of the new year. How soon the rubber business will return to a normal basis is still a matter of conjecture, but manufacturers are agreed that the sun of prosperity is again throwing its beams above the trade horizon.

A flood of inquiries for manufactured rubber goods from tires on down to the smallest mechanical lines made its appearance during the first week in January. All these inquiries have not resulted in orders, but they point definitely to the fact that dealers are getting set for a revival in demand for manufactured rubber products.

For the present, the industrial activity of the rubber companies is confined largely to boots and shoes, to rubber belts and belting, to hose and other mechanical goods. There is a daily output of tires of all sorts, but this production is so far below normal that it is overlooked by those Akronites accustomed to the "boom" times in the tire trade of a few months ago.

Officials of the large rubber companies, in such statements as they are making for public print, sound a very optimistic tone. However, they are still feeling their way and making ready to resume production only when the demand will justify the step. There seems to be little doubt but that the rubber plants can resume operations on a large scale within a short time. There are many employes in the Akron plants now on part time and many thousands of others who are still in Akron waiting for the word to return to work. This labor situation is one of the hopeful signs for an early resumption of activities.

Those companies making mechanical rubber supplies for railroads look for a big demand from the transportation companies early in the year. Already more inquiries have been received in Akron offices this year than were answered in the closing quarter of the last year.

It is to the tire demand that most attention is being paid. It is understood that the sales department of the one of the largest companies has prepared a statement indicating a shortage in the tire supply should business in general approach anything like a normal state in the spring and early summer. This statement, however, has not been given out.

Akron statisticians figure that the tire demand this year will approach the 40,000,000 mark. They base this upon the number of cars now in use and a very conservative estimate of the number which will be manufactured this year.

If Akron maintains its percentage of over 60 per cent of the tires manufactured in this country, this city will turn out around 24,000,000 tires in the next twelve months, provided, of course, the estimated consumption is correct. This would mean an average production of 80,000 tires a day from Akron factories. Tire production in Akron at its peak was estimated around 100,000 a day.

Taking these figures as a basis, it is easy to see why the optimism among rubber company officials is on the upward trend.

In this connection figures issued by the B. F. Goodrich Rubber Co. on the motor car registration for 1920 are interesting. According to these figures there are now 9,295,252 passenger cars and trucks in use—one for every 11.8 persons. This is an increase of 1,691,236 or 22.2 per cent over 1919 when there were 7,604,016 motor vehicles registered.

Portage Refinancing Approved

(Special Akron Correspondence)

Portage Rubber Co. stockholders at a recent meeting in Barberton approved plans for refinancing to the extent of $1,500,000. Details were left to directors. President M. S. Long stated the company has on its books for early delivery new business amounting to more than one-third the total volume of business done in 1920.

Mason Issues Statement

The Mason Tire & Rubber Co., Kent, Ohio, has recently issued its operating report for the fiscal year ending October 31, 1920. The condensed profit and loss statement for the above period is as follows:

Gross sales for period	$7,150,798.82
Less cost of goods sold, discounts returns and corrections	5,561,959.65
Gross profit	$1,588,839.17
Less adminstrative, selling and miscellaneous expenses	1,061,169.48
Net profit for year	$ 527,669.69

The condensed balance sheet as at the close of business, October 31, 1920 is as follows:

ASSETS

CURRENT				
Cash Balances		$114,149.33		
Accounts & Notes Receivable	$739,186.41			
Less Reserves	18,000.00	721,186.41	$835,335.74	
Inventories				
Finished Goods at Factory & Branches		1,782,044.87		
Work in Process		172,779.01		
Raw Material and Supplies		670,389.37	2,625,213.25	
Total Current Assets				$3,460,548.99
OTHER ASSETS				
Miscellaneous Investments			103,500.00	
Transportation Claims			5,683.82	109,183.82
FIXED ASSETS				
Real Estate	67,500.00			
Buildings	1,388,952.27			
Machinery and Equipment	1,739,542.36	3,128,494.63		
Less Reserve for Depreciation		182,957.50		
As appraised by American Appraisal Co. October 31, 1920 at sound market values			2,945,537.13	
Dormitories (at cost)			205,000.00	3,218,037.13
DEFERRED CHARGES				
Miscellaneous Deferred & prepaid Expenses				160,540.77
Good Will, Trade Marks, etc.			2,211,409.53	
Less Capital Surplus			935,639.50	1,275,770.03
				$8,224,080.74

LIABILITIES AND CAPITAL

CURRENT				
Accounts and Notes Payable			$834,586.07	
Dividends Payable			46,268.00	
Total Current Liabilities				$880,854.07
7 PER CENT SERIAL GOLD NOTES (Maturing May 1, 1921)				50,000.00
7 PER CENT SERIAL GOLD NOTES (Maturing Nov. 1, 1921 to May 1, 1926 Inc.				650,000.00
ACCRUED				
Accured Taxes and Royalties				38,420.02
RESERVE				
For Tire Adjustments				20,000.00
CAPITAL				
Preferred Stock		$5,458,920.00		
Common Stock "A"		500,000.00		
Common Stock "B"		383,462.50	6,342,382.50	
Payments on Capital Stock Subscriptions			65,048.42	6,407,430.92
SURPLUS				
Auditors Balance Nov. 1, 1919			45,671.51	
1919 Income Tax and Other Adjustments			32,581.57	
Profit for Year			527,669.69	
			605,922.77	
Less Dividends		414,834.22		
Less Adjustments		13,712.82	428,547.04	177,375.73
				$8,224,080.74

Contingent Liability October 31, 1920, on Trade Acceptances discounted, as verified by correspondence with all banks, was $155,035.11
Estimated Income and Profits Taxes for year, for which no Reserve was set up, approximately, $75,000.00.

Repair Equipment Business Good

F. E. Holcomb, president of the Williams Foundry & Machine Company, expressed great optimism for the future in an interview shortly after his election a few weeks ago at the annual stockholders' meeting of the company.

"Despite the fact that a machinists' strike of nine weeks early in the last fiscal year, held up our operations considerably," said Mr. Holcomb, "And regardless of the cancellation of numerous orders on account of railroad embargoes which prevented the receipt of raw material and shipment of finished goods, and curtailment in production of the rubber companies during the last summer, which naturally reduced orders for tire factory equipment, the year's business was very satisfactory to us. In fact, the volume of sales and profits exceeded those of previous years."

Mr. Holcomb said the present volume of orders on hand both of export and domestic shipment on both tire factory equipment and Akron-Williams tire repair equipment was so large that the coming year was sure to show great business increases over this year. He reported a big increase during the last year in foreign contracts.

Besides Mr. Holcomb, the following other officers were chosen for the ensuing year:—S. F. Zilliox, vice-president; G. C. Dicts, treasurer; W. J. Slater, secretary and assistant-treasurer. These officers, together with Chas. Herberich, A. W. Burnett and Chas. Reymann, will constitute the board of directors.

Kelly-Springfield Dividend

Kelly-Springfield Tire Co. has declared regular quarterly dividends of 3 per cent in stock and $1 a share in cash on the common stock, payable February 1 to stockholders of record January 14.

Regular quarterly dividend of $2 a share on the 8 per cent preferred stock also was declared payable February 15 to stock of record February 1.

Goodyear Issues Statement

(Special Akron Correspondence)

The annual audit of the books of the Goodyear Tire & Rubber Co. made by Price, Waterhouse & Co. as of October 31, 1920, shows that notwithstanding the sales exceeded $200,000,000 and were the largest in the history of the company, there is a deficit of $15,647,653.56. This deficit does not include anticipated losses on contractual obligations for rubber and fabrics. These losses are expected to be approximately $19,000,000.

In his report to stockholders at the time of submission of the auditor's figures, President Seiberling said in part:

"With uniformity for the past twelve years we have been able to state in our annual reports that "the past year's business has been the largest and most successful in volume and profits of any year in the history of the company.

"We regret exceedingly that we are not again able to make this statement, but on the contrary must state that the past year has been the only unprofitable year in the history of the company since 1903.

"For the first six months of the period the volume of business was running fifty-nine per cent greater than for the same period the year before, with the demand upon us for product beyond our ability to supply. This entailed financial requirements far beyond normal and your directors decided to offer to stockholders two shares of preferred and one of common at par, selling thereby $27,794,700.

"At the time it was anticipated that this would afford the necessary relief to carry on our business successfully, but by midsummer the buying demand fell off sharply and with the accumulation of raw materials and finished product, our financial position became acute, necessitating an arrangement for some temporary financing, which was accomplished by providing in new money and extension of bank paper $28,800,000 maturing Feb. 15, 1921, with the expectation that permanent financing would be accomplished prior to said maturity, which program is now being worked out.

"The process of readjustment and deflation affecting all lines of industry has been especially severe to the rubber industry, the raw materials—both rubber and fabric—having in a few months dropped in value over 50 per cent; and as inventories have been written down by the auditors to adjust to that condition, not only is our former surplus absorbed, but a deficit of $15,647,653.56 is shown. Future contracts have not been taken into consideration in this statement.

"Referring to item in the balance sheet of "Account due from F. A. Seiberling," this account has been closed by the company taking over the Goodyear athletic field (30 acres)and one half ownership of the Akron, Canton & Youngstown Railway Co., represented by $7,500,000 par value of the stock, which properties were acquired for the benefit of the Goodyear company and are essential to the proper conduct of the business.

"While diminished sales during the period of readjustment through which the country is passing have affected this statement adversely, and will continue to affect our business until general business becomes normal, we have reason to believe that the trend is now definitely upward, since the low point in sales was reached the middle of November, having steadily improved since that time."

Following is the Price, Waterhouse & Co. balance sheet:

BALANCE SHEET AS AT OCTOBER 31, 1920

ASSETS

Property Accounts:			
Land, buildings, machinery, equipment, etc., at Akron	$57,913,143.46		
Automobiles at Akron and branches	1,145,168.76		
Furniture, fixtures and equipment at branches	1,248,723.55		
		$60,307,035.77	
Less—Reserve for depreciation		10,787,494.40	
		$49,519,541.37	
Rubber plantation at Sumatra		5,003,257.81	
Miscellaneous property assets and fixed investments		670,687.15	
Patents, designs, trade-marks, etc.		1.00	
			$ 55,193,487.33
Deferred charges to operations			353,326.68
Investments in and accounts due from domestic subsidiary companies wholly owned			13,352,158.52
Investments in and accounts due from associated companies not wholly owned			21,179,529.82
Investments in and accounts due from foreign selling subsidiary corporations			4,393,217.89
Inventories (less reserve)			41,167,758.30
Customers' notes and accounts receivable (less reserve)			11,116,967.83
Other accounts receivable and investments			1,084,212.05
Cash			1,667,736.69
Account due from Mr. F. A. Seiberling, President (in respect of which he has deposited as collateral 75,000 shares of capital stock of The Akron, Canton & Youngstown Railway Co. and 250 shares of capital stock of The East Akron Land Co.)			3,568,445.08
			$153,076,840.19
Deficit, before providing for possible losses on contractural obligations for rubber and fabric			15,647,653.56
			$168,724,493.75

LIABILITIES

Capital Stock:—			
Preferred:			
Issued		$65,497,700.00	
Less—In treasury		450,000.00	
		$65,047,700.00	
Add—Payments on account of stock not yet issued		1,085,822.99	
		$66,133,522.99	
Common:—			
Issued		$61,111,650.00	
Less—Amounts due on subscriptions for stock issued:			
From employees in respect of which 15,780½ shares are held as collateral	$480,827.60		
From F. A. and C. W. Seiberling (in respect of which 6,743 shares are held as collateral)	736,095.17	1,216,922.77	
			59,894,727.23
Total capital stock			$126,028,250.22
Bills Payable:	Secured	Unsecured	
Bank loans	$3,218,000.00	$10,221,423.68	
Brokers	350,000.00	4,745,500.00	
Trade and miscellaneous		5,344,888.81	
	$3,568,000.00	$20,311,812.49	23,879,812.49
Rubber and fabric acceptances payable			4,388,686.91
Accounts Payable (including estimated Federal taxes due)			12,711,168.75
Reserves for contingencies, etc.			1,716,575.38
Note:—The company has outstanding guarantees and contingent liabilities aggregating approximately $12,000,000; it is not anticipated that any losses will be sustained thereon.			
			$168,724,493.75

News from the Industry at Large

Wellington Enlarges Directorate—Delion Offers New Tires—Dunlop Suspends Operations—Franklin Declares Dividend— Allen Tire in Production —Goodyear Reduces Salaries

Wellington Enlarges Directorate

The annual meeting of The Wellington Rubber & Novelty Co., was held January 3 at the company office. At that meeting the board of directors was increased from six to seven, and the following directors elected: R. C. Garretson, C. W. Horr, G. E. Wells, A. H. Binder, J. C. Macdermott, F. W. Renouard and R. L. Walden. The four latter men are new members. Clyde L. Robinson was made secretary of the company.

Authority was given the directors to lease, sell or operate the plant at their discretion. Several parties have submitted propositions of diverse nature for the consideration of these new officials, and it is expected something definite will be broached soon that will enable the receivership to be lifted and the plant put in operation. It is the consensus of the board of directors that the plant should be retained and operated here.

Delion Offers New Tires

The Delion Tire & Rubber Company, Baltimore, Md., is offering to the trade a new model cord, and a new model fabric tire, which, it is claimed, embody the most recent tested improvements in design, construction and processes of manufacture.

The new Delion cord tire is cured over air bags, under a constant pressure, to stretch out any possible buckles in the fabric—the frequent cause of fabric separation. It has the new jet black crown tread, which affords an unusual broad, practically flat, non-skid wearing surface and which distributes road strain evenly throughout the carcass. The husky tread and the broad white band on the side wall make this tire as attractive on the car, as it is flexible, resilient and strong.

The new fabric is the wrapped tread tire with jet black clover-leaf tread, contrasting with white side walls. Its broad tread was designed to afford the maximum non-skid protection combined with long wear.

After its seven years of successful business experience, The Delion Tire & Rubber Company has now moved to its new plant in Baltimore, where improved machinery and the most modern tire building equipment make this what is claimed to be one of the most up-to-the-minute tire factories in the country.

John W. Price, president of the company, is a man who has achieved enviable reputation in the fields of law and of big business. Robert B. Arnold, vice-president, in charge of production, is chief chemist and a master in his profession. He has devoted years of intensive study to the manufacture of rubber and rubber compounds.

W. C. Price, vice-president, in charge of purchase and sales, is well known to the trade, through his long association with the company. He has behind him twenty years of successful experience in his particular branch of executive work.

R. L. Swats, sales manager of the company, is a sales veteran. He has been identified with the mechanical rubber goods and tire industry for eighteen years.

Earle E. Harrington, general superintendent of the plant, is a native of Akron, Ohio, and, of course, has practically been raised on tires. He has held positions of importance in the Marathon, Firestone and Goodyear companies.

Branch managers of the company, H. F. Seltzer, of Washington, D. C., William J. Wilson, of New York, and Charles B. Lynch, of Philadelphia, are well known to the trade in their respective territories.

Dunlop Suspends Operations

The Dunlop Tire and Rubber Company has practically suspended building operations at Buffalo, N. Y. At the office of the company this statement was given out today:

"The Directors of the Dunlop Tire and Rubber Corporation have decided that general conditions in the automobile industry are such that they are justified in slowing down their program until conditions improve. April 1 is the probable date of resumption of activities, although it may be much sooner if the conditions justify."

Approximately $36,000,000 has been spent by the company since building operations were started a year and a half ago.

Franklin Declares Dividend

At a meeting of the board of directors of the Franklin Rubber Co., Boston, Mass., which was held on January 10, the annual dividend was declared to stockholders on record December 31, 1920. Other matters which were taken up at that time were held over until the annual meeting which takes place in February.

Allen Tire in Production

The Allen Tire & Rubber company, of Allentown, Pa., has completed the first unit of its new plant and started the production of tires and tubes the first of the year. The organization is complete and the product is now being distributed to the dealers.

For the present, the production will be limited to cord and fabric tires and tubes. It is the intention to undertake the manufacture of other lines of rubber goods as soon as practical.

Two other units are now under construction and will be completed by summer. The plant was started in April 1920 and considering conditions, a remarkable record was made in accomplishing the completion of the factory and the installation of the machinery in such a short time.

PLANT OF ALLEN TIRE & RUBBER CO., ALLENTOWN, PA.

Again the Allen Company was particularly fortunate in their purchases of fabric, rubber, and other materials at the recent low levels and as a result, the company is now in a strong position financially.

The production is under the supervision of Wilmer Dunbar, president of the company, who has been a familiar figure in the rubber world for many years; and it is the intention of the company to manufacture tires and tubes of the highest quality.

Goodyear Reduces Salaries

The Goodyear Tire & Rubber Co. on January 4 announced a reduction of 12 ½ per cent. in wages of all factory employes, effective January 10, and reduction in salaries of all office employes, clerks and officials of the company, ranging from 15 to 20 per cent., effective January 15.

Goodyear officers in announcing the wage and salary reduction, declared the step was in keeping with the company's policy of retrenchment and readjustment. Announcement also is made that the company will not employ any new men until present factory force is restored to a full time basis of operation.

The matter of the wage and salary cuts was discussed on the floor of the Goodyear house and senate by factory legislators in the company's industrial republic. The company's move was approved, and officials expressed themselves as gratified.

Crude Rubber Importations for 1920

The following statistics showing the importations of the various classes of crude rubber into the United States by months during 1920, have been issued by the Rubber Association of America:

PLANTATIONS

	Tons
January	17,799
February	29,681
March	28,533
April	21,036
May	24,443
June	12,911
July	14,695
August	12,730
September	10,974
October	8,759
November	5,695
December	9,716
Total	196,972

MANICOBA & MATTO GROSSO

	Tons
January	..
February	..
March	3
April	10
May	..
June	..
July	..
August	..
September	22
October	..
November	..
December	51
Total	86

AFRICANS

	Tons
January	821
February	558
March	514
April	628
May	662
June	427
July	34
August	13
September	99
October	27
November	39
December	59
Total	3,881

CENTRALS

	Tons
January	111
February	265
March	23
April	29
May	95
June	27
July	40
August	75
September	8
October	17
November	12
December	11
Total	713

GUAYULE

	Tons
January	.....
February	34
March	114
April	79
May	113
June	164
July	.....
August	156
September	74
October	223
November	48
December	32
Total	1,037

PARAS

	Tons
January	2,620
February	2,456
March	2,463
April	1,893
May	2,025
June	1,352
July	1,115
August	590
September	459
October	1,613
November	654
December	1,151
Total	18,391

BY MONTHS

	Tons
January	21,351
February	32,994
March	31,650
April	23,675
May	27,338
June	14,881
July	15,884
August	13,564
September	11,636
October	10,639
November	6,448
December	11,920
Total	221,080

BY GRADES

	Tons
Plantations	196,972
Paras	18,391
Africans	3,881
Centrals	713
Guayule	1,037
Manicoba & Matto Grosso	86
Total	221,080

ARRIVALS OF PLANTATIONS BY PORTS

Atlantic Ports

	Boston	New York	Totals
Jan.	...	17,638	17,638
Feb.	...	26,309	26,309
March	...	25,627	25,627
Apr.	...	16,736	16,736
May	...	23,148	23,148
June	...	11,593	11,593
July	...	13,585	13,585
Aug.	...	11,319	11,319
Sept.	...	10,764	10,764
Oct.	...	8,740	8,740
Nov.	...	5,695	5,695
Dec.	171	9,545	9,716
	171	180,699	180,870

Pacific Ports

	San Fran.	Seattle	Vancouver	Totals
Jan.	.....	.....	161	161
Feb.	177	1,728	1,467	3,372
March	2,492	414	.....	2,906
Apr.	3,312	857	131	4,300
May	1,028	71	196	1,295
June	584	553	181	1,318
July	593	34	383	1,110
Aug.	53	164	1,194	1,411
Sept.	132	78	.....	210
Oct.	.....	19	.....	19
Nov.	.....	.....	.....	.....
Dec.	.....	.....	.....	.....
	8,471	3,918	3,713	16,102

Ames Holden McCready Changes

R. W. Ashcroft, director of publicity of the Ames Holden McCready System, Montreal, Canada, has been appointed assistant to the president of that company, in addition to his other duties.

W. Youngblud has been appointed sales manager of the tire department vice E. C. Kabel, resigned. Mr. Youngblud has been for some time tire sales manager of the Quebec division of the Canadian Consolidated Rubber Company, and is well known to the tire trade of Canada.

K. & S. Completes Factory

Word has been received to the effect that the K. & S. Tire & Rubber Goods, Limited has completed the erection of a factory at Toronto, Canada. The firm will manufacture 300 tires and 750 tubes per day and it is stated that the output for the coming season has already been sold. The firm has also completed the installation for the manufacture of druggist's rubber sundries.

New Monthly Issue by Delion

The Delion Tire & Rubber Company of Baltimore, Md., has just issued the first number of a magazine for Delion dealers. The January issue of this crisp little sixteen page book is printed in two colors, on high quality stock, and is full of attractive illustrations and interesting information for the tire dealer.

This new publication is named "Free Air", because it is designed "to inflate your tire sales. Any tire dealer may have this publication sent to him regularly, by mailing his request to the Delion Tire & Rubber Company, Baltimore, Md.

Rubber Importations for December

Figures recently issued by the Rubber Association of America show over a fifty per cent reduction in the importations of crude rubber for the month of December 1920 as compared to those for December 1919. Total importations for 1920 were slightly lower than those for the preceding year according to the statistics. Importations for December 1920 amounted to 11,020 tons while those for December 1919 totalled 24,675 tons. Total importations for the twelve months ending December 31, 1920 were 221,080 tons while 231,511 tons were tons entered the United States during the corresponding period of 1919. Following are the detailed statistics:

PLANTATIONS

From—	Tons.
Rotterdam	115
London	86
Singapore	7,469
Colombo	1,543
Batavia	40
Cochin	102
Sourabaya	165
Penang	177
Pt. Swettenham	2
Port Dickson	17
	9,716

MANICOBA & MATTO GROSSO

Manicoba	51

AFRICANS

From—	Tons
Marseilles	54
Havre	5
	59

CENTRALS AND GUAYULE

Centrals (Mexico and Central America)	11
Guayule (Mexico) By Rail Eagle Pass	32
	43

PARAS

Manaos	700
Para	396
Iquitos	55
	1,151

GUMS, WASTE RUBBER, ETC., IMPORTED FROM VARIOUS SOURCES

	Tons
Waste	376
Balata	42

COMPARISON 1919- 1920

	Dec. 1919	Dec. 1920	Total Importations 12 months ending, Dec. 31st. 1919	1920
Plantations	21,885	9,716	197,748	196,972
Paras	2,178	1,151	27,058	18,391
Africans	445	59	3,340	3,881
Centrals	135	11	1,422	713
Guayule	23	32	1,501	1,037
Manicoba and Matto Grosso	9	51	442	86
	24,675	11,020	231,511	221,080

ARRIVALS PLANTATIONS FOR DECEMBER, 1920, SHOWING PORTS OF ORIGIN AND ARRIVAL

From	Arrived At	Tons
Singapore	New York	7,469
Penang	New York	177
Batavia	New York	40
Sourabaya	New York	165
Cochin	New York	102
Colombo	New York	1,372
Colombo	Boston	171
Port Dickson	New York	17
Rotterdam	New York	115
London	New York	86
Port Swettenham	New York	2
		9,716

ARRIVALS OF PLANTATIONS BY PORTS

Atlantic Ports		
New York	9,545	
Boston	171	
		9,716

Holly-Wood Moves Offices

The Holly-Wood Chemical Co. formerly located at 101 Beekman St., New York City, has moved its offices from that address to the plant of the firm at 2005-2009 Palmetto St., Brooklyn, N. Y.

MARKETS

Manufactured Rubber Goods

NEW YORK, JANUARY 17, 1921

With business conditions steadily returning to a point more nearly normal, the outlook in the rubber industry is brightening materially. While the industry is not yet getting production back to capacity, or near-capacity, plans for a general resumption are going forward steadily.

Rubber shoe and drug sundries manufacturers have been active factors in the crude rubber market during the past fortnight and the latter market has been greatly strengthened. Rubber products manufacturers are not yet showing much interest in other raw materials markets, and it is believed that they have on hand sufficient stocks to take care of their early requirements. Most of these supplies, however, were bought at prices materially over those now ruling, and it is not thought that the manufacturers will come in for cheaper stocks until all their high-cost holdings are cleared.

AUTOMOBILE TIRES

Akron dispatches state that on the basis of four tires a year used by the 9,295,252 automobiles which are reported to be registered in the United States no less than 37,000,000 tires will be required. The number of tires used up by each car was formerly estimated at five, but has been decreased owing to the larger mileage now derived from tires. Computed on the basis of one tire per man per day, the use of 37,000,000 tires this year will mean an average of 120,000 men and women must be employed in the rubber factories to produce tires during 1921, to take care of the domestic consumption alone. However, this year's car registration, from incomplete figures already announced, shows a large increase over last year's figures. This in itself is evidence that more tires will be needed in 1921 than in 1920. Added to this, however, is the large export business which has been reported and in all probability, especially in view of the statements of several leaders in the industry, the year 1921 will see an unprecedented demand for tires.

Stocks of tires held by manufacturers are being steadily cut down by current buying. Manufacturers, however, are still keeping down production to a great extent, and are content to let the demand absorb the surplus quantities of tires which piled up last year when demand shut down so abruptly.

Manufacturers who have been practically closed down for some weeks past, are now beginning to show a little more activity. The raw materials markets are coming in for closer scrutiny, although buying on a large scale has not yet been resumed.

MECHANICALS

Business is still slow in the mechanical branch of the industry. The past year, on the whole, was a good one for leading manufacturers, the brisk business experienced during the first half of the year counterbalancing to some extent the losses suffered during the closing period. Manufacturing is still being held down far below normal. With demand limited to the actual needs of consumers, and with the markets for raw materials used in the manufacturing of mechanicals still fluctuating, producers feel that they are not safe in going ahead and piling up any surplus of finished goods.

RUBBER FOOTWEAR

Western rubber footwear manufacturers have been active in the crude rubber market during the past fortnight, and fair-sized quantities have been purchased to go forward to the factories for use in manufacturing spring lines of footwear. With prices on all raw materials down, producers hope that they will be able to put out their products at lower prices this year, and so greatly stimulate the demand. Orders for rubber-soled tennis and sport shoes for spring delivery are now being booked, and a fair business is reported.

Conditions in the rubber heel market have been improving right along. The open winter experienced in many of the Eastern consuming markets has kept demand more active than usual for this season of the year. Rubber and composition soles have also been meeting with a better sale.

MISCELLANEOUS

With prices on sugar and other products getting down to a low basis, producers of rubber jar rings see a good season ahead of them, and are making plans for a good business during the summer of 1921. Specialty manufacturers, particularly those turning out pads and other appliances for automobiles, are doing a fair spring business in their lines, and are looking for a good season.

Cottons, Yarns and Fabrics

NEW YORK, JANUARY 17, 1921

Cotton prices are materially stiffer all along the line. Selling pressure from Southern growing sections has eased off materially thus far in the new year, and thus much of the cause for bearishness has been at least temporarily abolished.

Improvement in the cotton manufacturing industry has also gone a long way towards strengthening the market for the raw material. Many mill centers are now again operating, at least on part time, and the goods are selling again as the result of further drastic price cuts made by leading factors in the industry.

January cotton, which was quoted at 14.97 cents per pound on January 5, is now held at 17.08 cents, while February is now held at 15.95 cents, against 14.45 earlier in the year. Other options have shown proportional advances for the period.

The Eastern fabric mills are counting upon business from the automobile tire industry in the near future. The large fabric stocks which were on hand when the business depression hit the tire market last year are now believed to be well cleared, and it is believed that the tire makers will soon have to order new material. No buying of raw cotton in anticipation of any such action is being done, however.

Cotton growers are making a determined effort to bar out imported cotton by placing a prohibitive tariff on the staple. Cotton has been included in the emergency tariff bill now ready for a hearing, but it is not thought in the trade that the bill will go through.

ARIZONA-EGYPTIAN COTTON

The crop of Arizona long staple cotton this year is said to be an unusually fine one, but reports as to quantity and quality are not being circulated by the growers to any great extent. The rapid declines in market prices on their product have discouraged many of the growers and the success of the holding movement appears doubtful. Spinners are not in the market for the domestic long-staple to any extent, and do not expect to become heavy buyers until resumption of tire manufacturing occurs on a larger scale. For their present needs, the spinners have on hand stocks of Egyptian long staple, and some supplies of the domestic product to take care of their needs. With the market on Egyptian cotton falling steadily, no reason for a high market on the domestic long staple can be seen.

EGYPTIAN COTTON

Continued weakness in Egyptian cotton prices is reported recently in Alexandria cables. With American buyers practically out of the market, sellers report a dull inquiry, with bearish prospects for the future of the crop. Con-

sular advices state that the crop will be of fair-size.

TIRE FABRICS

Comparatively little inquiry for tire fabrics is reaching spinners from manufacturers, but an early improvement in conditions is expected. While tire manufacturers were known to have fair-sized stocks of fabrics on hand when the slump hit the market last year, it is believed that most of these supplies have since been used up by the tire makers, in their reduced operations. There is no heavy surplus of madeup tire fabrics in sight, the spinners having taken prompt action to forestall such a contingency by promptly shutting down their plants when the trend of conditions in the tire market was fully realized. Leading factors in the market continue to keep list prices withdrawn, but are taking on business whenever offered, at prices determined upon privately for each individual transaction.

HOSE AND BELTING FABRIC

Further reductions in prices on all varieties of ducks have been recorded. Hose and belting ducks are off 3 cents to 35 cents per pound under light buying. Enameling ducks show a drop of 5 cents per pound, offering at 35 to 40 cents per pound. Shoe ducks are 2 cents per pound lower at 42 cents. Single filling ducks at 14 to 18 cents per yard hold unchanged, while double filling are 3 cents down at 17 to 20 cents per yard. Demand for all varieties is reported to be light.

DRILLS SHEETINGS AND OSNABURGS

A better consuming inquiry for both drills and sheetings has developed, and the market holds steady. Many members of the trade express the opinion that prices have reached bed-rock, and that advances are to be looked for from now on. Some mills which announced low prices around the turn of the year, have since withdrawn these prices. In one or two instances, advances of from ¼ to ½ cent per yard have been made on various trade-marked lines. Operations at the mills are being resumed on a larger scale the operatives accepting wage reductions of from 10 to 22½ per cent in order to keep themselves working. Demand for Osnaburgs is routine, and the market is showing a nominal tone.

TIRE FABRICS

17¼-ounce Sea Island, combed, sq. yd.	Nominal		
17¼-ounce Egyptian, combed	—	@	—
17¼-ounce Egyptian, carded	—	@	—
17¼-ounce Peelers, carded	—	@	—
17¼-ounce Peelers, combed	—	@	—

DUCKS

Belting (pound basis) lb.	.35	@	—
Hose (pound basis) lb.	.35	@	—
*Enameling lb.	.35	@	.40
Shoe Ducks lb.	.42	@	—
Single filling yd.	.14	@	.18
Double filling yd.	.17	@	.20

*Price varies according to width.

DRILLS

37-inch 3.25-yard yd.	.10¾	@	—
37-inch 2.75-yard yd.	.13	@	—
37-inch 3.00-yard yd.	.11	@	.11½
37-inch 3.50-yard yd.	.10	@	—
37-inch 3.95-yard yd.	.09½	@	—

OSNABURGS

30-inch 7-ounce	.10	@	—
40-inch 7-ounce	.11	@	—

SHEETINGS

40-inch 2.35-yard yd.	Nominal		
40-inch 2.50-yard yd.	.12½	@	—
40-inch 2.85-yard yd.	—	@	—
40-inch 3.15-yard yd.	.12	@	.13
40-inch 3.60-yard yd.	.09	@	.09½
40-inch 3.75-yard yd.	.09	@	—
40-inch 4.25-yard yd.	.08¼	@	.08½

Note—In view of the unsettled conditions prevailing in the market at the present time, the prices quoted above are more or less nominal, and are not guaranteed.

BURLAPS
(Carload Lots)

7 -ounce 40-inch	——	@	——
7½-ounce 40-inch	——	@	——
7½-ounce 45 inch	4.15	@	——
8 -ounce 40-inch	4.25	@	5.50
8½-ounce 40-inch	——	@	——
10 -ounce 36-inch	——	@	——
10 -ounce 40-inch	Nominal		
10 -ounce 45-inch	Nominal		
10½-ounce 40-inch	5.00	@	——

Chemicals and Compounding Materials

New York, January 17, 1921

Producers are making strenuous efforts to get the market upon a stabilized basis, but the undertone is still weak, and the outlook is uncertain in many lines. Numerous price reductions were put into effect during the past two years, lead pigments and dry colors leading in the declines.

Buying for the account of the rubber tire industry has been very light, and while some talk of early revival of trading in this quarter is heard of, the actual buying has not as yet commenced. Resumption in motor car manufacturing is reported from various quarters of the country, and the chemical and compounding material trade is hoping that this action presages the early resumption of tire manufacturing on a large scale.

The tariff question is at present exciting considerable excitement in the trade. Domestic producers of both chemicals and compounding materials, are agitating the inclusion of their products in the emergency tariff bill, with a view to making prompt and sharp increases in import duties on the products they turn out. Consumers of the goods, however, are not in favor of such drastic action, holding that any drastic increases in import duties would choke off supplies of foreign materials and so keep the market here on a higher price basis than would otherwise be the case.

IMPORTS AND EXPORTS

Heavy imports of pig lead from Mexico and Europe have broken the market here, and have forced the closing of many mines, selling prices having gotten below the cost of production level. Heavy offerings of Germany dry colors, especially blues, have brought on a reduction in prices on domestic stock. Export trading has shown little animation during the fortnight, business being largely of a routine character throughout.

LITHOPONE

No alteration in present prices on lithopone is reported, and current quotations are expected in the trade to hold good until March. Producers have cut down on the output, fearful of putting by too large a reserve stock, which might tend to bear the market later on when consumers are expected to come into the market for stocks. The market is quoted at 8 cents for carlots of lithopone in barrels and 7-¾ cents for lithopone in bags.

BARYTES

Trading in this division of the market has been generally quiet during the past fortnight. Stocks of foreign goods continue to come forward, but thus far the domestic producers are not unduely alarmed over the competition. Pure white domestic holds at $32.00 to $38.00 per ton, with the f. o. b. mills price for bulk stock unchanged at $23.50 to $25.00 for Southern and $23.50 to $26.00 for Western.

ZINC OXIDE

Rumored reductions in zinc oxide prices are prevalent, but thus far no further price declines have been announced. Action along these lines some time this week would not be surprising, however. No material curtailment in the production of zinc oxide has been made, producers keeping up operations to take care of both current business and future requirements. Producers are hoping for an early resumption of buying for the account of the automobile trade.

LITHARGE

Prices on litharge have been reduced one per cent per pound on practically all grades, powdered commercial in casks being held at 8¾ cents, and in steel kegs 13 cents per pound, for quantities less than one hundred pounds, other quantity prices being given below. There is a better demand for the product reported as a result of the price decline, stocks in the hands of consumers being generally light.

DRY COLORS

Declines in prices have been reported in several lines. Prices on blues have shown a sharp decline, falling from 82 cents per pound to 60 cents, following heavy imports of German blues at prices materially under the ruling market on domestic stock. A little improvement in demand for blacks is reported, and the market on this color is holding about steady. Yellows are quoted lower throughout the entire list, on light buying. Reds, on the contrary, have gained a little strength, American pure Indian red being held at 16½ cents per pound on the top, with goods offering at 14 cents on the inside. Commercial greens are a little lower at 13½ cents, but other grades are unchanged. Vandyke browns have fallen off to 7½ to 10 cents per pound.

WHITING

No appreciable change in conditions in this branch of the market are to be noted. Buyers are generally operating on a hand to mouth basis, taking stocks only as required. Commercial in carlots are held at $1.40 per hundred pounds.

MISCELLANEOUS

A quiet demand for talc is reported, the market holding at $18 to $20 per ton for domestic. Glues are moving in a fair way, the market holding quotably unchanged. Putty is quiet, and supply is fully equal to the demand. Casein is dull and showing weakness at 15 to 16 cents.

CRUDES

An improved demand for benzol is recorded in the market, and the market is

holding steady at 28 to 34 cents per gallon for the 90 per cent, price varying according to quantity and container. The market is assuming a more active appearance on this article throughout. Little activity in solvent naptha is recorded, and the market remains quoted at 28 to 34 cents per gallon. Toluol holds at 30 to 36 cents per gallon for pure, with demand routine. Xylol is also quiet and nominally held.

INTERMEDIATES

A stronger undertone features the market for aniline oil, prices holding at 23 to 26 cents per pound, firm, with offerings light at these figures. Stocks available for immediate shipments are said to be not excessive. Acetanilid is moving slowly at 27 to 40 cents per pound for technical. Bendaldehyde is offering at 50 to 55 cents per pound under a light inquiry. Dinitrobenzol holds nominally unchanged at 25 cents to 27 cents per pound. Dimethylaniline at 59 to 70 cents per pound spot is selling slowly. Paraphenylenediamine is moving a fair way at $2.00 per pound in first hands and down to $1.75 in second hands. Paranitraniline i s unsettled, prices varying with different producers.

Current Prices for Chemicals, Fillers, Colors, etc.

Acetone, carlots ..... lb.	.13	@	—
Acetanilid, C. P., bbls .... lb.	.25	@	.40
Acetone smaller lots ..... lb.	.13½	@	.14
Acids, Acetic, 56 per cwt. cwt.	—	@	—
Carbolic, C. P. ..... lb.	.09	@	.12
Muriatic, 20 deg. .. cwt.	1.70	@	2.50
Muriatic, 22 deg. .. cwt.	2.50	@	3.25
Nitric, 40 deg. .... cwt.	7.00	@	7.50
Nitric, 42 deg. .... cwt.	7.50	@	8.00
Sulphuric, 60 deg. .. car lots ..... tons	13.00	@	15.00
Sulphuric, 60 deg. car boys	21.00	@	—
Tartaric, crystals .. lb.	.43	@	—
Albalith	.07¾	@	.08¼
Aluminum Silicate	Nominal		
Aniline oil, bulk basis Contract	—	@	—
Imported	Nominal		
Domestic	.23	@	.26
Antimony— Oxide ..... lb.	.07½	@	.08¼
Sulphuret, red ..... lb.	.25	@	.30
Sulhuret, golden .... lb.	.27	@	.30
Sulphuret, crimson .. lb.	.44	@	.45
Alcohol, denatured, 190 proof	—	@	—
Wood, 95 per cent....	1.90	@	1.95
Ethyl, 190 proof.....	5.10	@	5.15
Aldehyde, Ammonia	Nominal		
Ammonia, powdered.....	.15¾	@	.16
Ammonium Carbonate, domestic ..... lb.	.15¾	@	.16
Amyl Acetate ..... gal.	3.70	@	3.80
Anthracene 80 per cent...	.80	@	.85
Anthroquinine, 95 per cent ..	1.85	@	2.00
Asbestine	Nominal		
Asphaltum, Egyptian .... lb.	.20	@	.25
Domestic ..... ton	.30	@	.40
Barium, dust ..... lb.	.05½	@	—
Barytes, prime white imported ..... ton	Nominal		
white, domestic .... ton	32.00	@	38.00
off-color, domestic ... lb.	20.00	@	28.10
Southern, f. o. b. mills.	23.50	@	25.00
Western, f. o. b. mills..	23.50	@	26.00
Beeswax	.18	@	.54
Benzidine Base ..... lb.	.95	@	1.00
Benzol, 90 per cent	.28	@	.34
Benzol, pure bulk, 100	.30	@	.36
Blanc Fixe, dry, bbls..... lb.	.05½	@	.05¾
Burgundy Pitch, dom. .. lb.	.05	@	.06½
Foreign	.60	@	.65
Blacks, Drop ..... lb.	.07½	@	.16
Ivory ..... lb.	.18	@	.25
Carbon, gas, cases lb...	.10	@	.20
Lampblack, R. M. ..... lb.	.16	@	.48
Mineral blacks..... ton	35.00	@	45.00
Blues, Prussian ..... ton	.60	@	—
Soluble ..... lb.	.60	@	—
Ultramarine ..... lb.	.15	@	.35
Browns, Umber, Turkey, burnt powdered ..... lb.	.05½	@	.07
American, burnt,.... lb.	.04½	@	.05
Cadmium, sulphide, yellow lb.	1.40	@	1.45
Carbon, Disulphide, bulk. lb.	—	@	—
Bisulphide ..... lb.	.08	@	.09
Casein, C. P. ..... lb.	.45	@	.48
Castor Oil	.11½	@	.13
Caustic Soda, 76 per ct. cwt.	3.90	@	3.95
Chalk, precipated, extra light ..... lb.	.04¾	@	.05
heavy ..... lb.	.03¾	@	.04
China clay, domestic.... ton	10.00	@	12.00
imported ..... ton	16.00	@	25.00
China Wood Oil, bbl. .... lb.	.11	@	.11½
F. o. b. Pacific Coast ..	.09½	@	—
Chloroform, U. S. P.	.40	@	.43
Clay, Dixie..... ton	22.00	@	—
Blue Ridge..... ton	22.00	@	—
Coal Tar Pitch.....	—	@	—
Cottonsed Oil, crude, f. o. b. mills ..... lb.	6.00	@	—
Prime summer yellow ..	8.00	@	—
..... bbls.	—	@	—
Dimethylaniline ..... lb.	.59	@	.70
Elateron	—	@	—
Formaldehyde, spot ..... lb.	.17½	@	.27
Fullers Earth, powd., carload lots	17.00	@	20.00
Fossil flour ..... lb.	—	@	—
Genasco Mineral Rubber....	—	@	—
Gilsonite ..... ton	60.00	@	65.00
Glue, extra white..... lb	.35	@	.45
medium ..... lb.	.29	@	.34
low grade	.21	@	.25
foot stock	.18	@	.21
brown foots	.18	@	.22
common bone	.17	@	.19
Glycerine, C. P. (drums) lb.	.19	@	.20
cans	.21	@	.22
Graphite, flake (bbl.).... lb.	.14	@	.20
powdered (bbl.) .... lb.	.04	@	.10
Green, chrome, R. M. .... lb.	.40	@	.68
Ground glass (fine)..... lb.	.03½	@	.04
Hexamethylene ..... lb.	1.25	@	1.30
Hexamethyenetramine .... lb.	1.20	@	1.30
Infusorial earth, powd'd.. lb.	.02	@	.035
bolted ..... lb.	.035	@	—
Iron ovide, red, reduced grades ..... lb.	.13	@	.15
red, pure, bright.... lb.	—	@	—
Kaolin	—	@	—
Lime, hydrated	—	@	—
Lead, red dry (casks) ... lb.	.09¼	@	.09½
sublimed ..... lb.	—	@	—
white, basic carb ... lb.	.08	@	.08½
white, basic sulp. ... lb.	.07½	@	.07½
Lime flour ..... lb.	—	@	—
Litharge (casks) ..... lb.	.08¾	@	.09
English ..... lb.	—	@	—
Lithopone, domestic, bbls.. lb.	.08	@	—
in bags ..... lb.	.07¾	@	—
M. R. X.	—	@	—
Magnesia, carbonate ..... lb.	.15	@	.17
calcined light ..... lb.	.60	@	.65
Magnesite, calcined, pwd.ton	50.00	@	65.00
Magnesia, Oxide, heavy.....	—	@	—
Light	—	@	—
Extra light	—	@	—
Napthalene ..... lb.	.07½	@	.11
Nitrobenzol	.12	@	.14
Naphths, motor gasoline, (steel bbls.)..... gal.	.31	@	—
68 @ 70 degrees (steel bbls.) ..... gal.	.38	@	—
70 @ 72 degrees (steel bbls.) ..... gal.	.39	@	—
73 @ 76 degrees (steel bbls.) ..... gal.	.41	@	—
machine (steel bls.) gal.	.50	@	—
Oil, corn, crude factory .cwt.	8.86	@	—
corn, ref. (bbls.) ..cwt.	12.00	@	—
linseed, (bbls.)	.83	@	—
In carloads, spot	.80	@	—
Tank cars	.73	@	—
Oil palm, Lagos..... lb.	.07¾	@	—
Niger	.07¼	@	—
Pine, yellow ..... gal.	1.45	@	1.50
Distilled ..... gal.	1.50	@	1.60
Rapseed, refined ... gal.	1.10	@	—
Rapseed, blown .... gal.	1.25	@	—
Rosin, first rectified gal.	.54	@	—
Second, run	.57	@	—
Tar (commercial) .. gal.	.43	@	—
Oleum Acid, 20 per ct... ton	22.00	@	25.00
Orange mineral, Amer. .. lb.	.12¼	@	.16
Imported ..... lb.	Nominal		
Ozokerite	Nominal		
Paraphenylenediamine ... lb.	1.75	@	2.00
Petrolatum, bbls., amber.. lb.	.08	@	—
Pale yellow ..... lb.	.07½	@	.08½
Parafin, refined, 118 @ 120 m. p.	.08¾	@	.09
127 @ 129 m. p.....	.09¾	@	.10¼
137 @ 140 m. p.....	.11	@	.11½
Phenol	.08½	@	.12
Pumis	.03	@	.08
Pine tar kiln ..... bbl.	14.50	@	15.00
Pitch ..... bbl.	9.00	@	9.50
Plaster of paris..... bbl.	4.25	@	5.00
Red Tuscan ..... lb.	.22	@	.30
Red (American).... lb.	.14	@	.16
Indian (English).....	.14	@	.16½
Standard ..... lb.	—	@	—
Rosin (common to good)— 280 lbs.....	8.50	@	—
Rotten stone, powdered .. lb.	.02½	@	.04½
Rubber, substitute, black. lb.	—	@	—
White ..... lb.	—	@	—
Brown ..... lb.	—	@	—
Mineral, Hard Hydrocarbon ..... ton	42.00	@	—
Rosin Oil, first rectified	.54	@	—
Second rectified	.57	@	—
Third rectified	.65	@	—
Fourth rectified	.85	@	—
Soda ash, light 58 pct. .cwt.	1.95	@	2.20
Sodium Nitrite 96 @ 98 pct.	.16	@	.17½
Solvent Naptha, crude, hvy.	.28	@	.34
Soya Bean Oil, bbls. ..... lb.	.08½	@	.09½
Sellers, tanks, f. o. b. Coast	.05½	@	—
Stearic Acid, single	.12¾	@	—
Shellac, fine orange..... lb	.86	@	.87
Sulphur Chloride, drums...	.06½	@	.16
Shellac T. N. ..... lb.	.77	@	.78
Bleached, ordinary.. lb.	.74	@	.75
Bleached, boendry... lb.	.89	@	.90
Silex (silicia)..... ton	25.00	@	40.00
Soapstone, powdered ... ton	15.00	@	20.00
Starch, corn, powd. ..cwt.	2.93	@	3.41
Pearl	2.83	@	3.31
Jap potato, duty pd. .lb.	.05½	@	—
Sulphur, crude..... ton	—	@	—
100 pounds.....	—	@	—
Roll	2.85	@	2.95
Commercial superfine ..	2.10	@	2.75
Talc, American..... ton	18.00	@	20.00
French ..... ton	30.00	@	36.00
Thiocarbanilid	—	@	—
Tolulol, pure, in drums, gal.	.30	@	.36
Commercial	.30	@	.32
Tripolite earth..... lb.	.01½	@	—
Turpentine, pure gum— Spirit ..... gal.	.72	@	.73
Wood ..... gal	.68	@	.70
Venice, artificial..... gal.	.15	@	.18
True	2.85	@	3.00
Vermillion, English ..... lb.	1.00	@	1.10
American	.25	@	.30
Vorite	Nominal		
Wax, beeswax, crude, yel. lb.	.21	@	.22
Refined	.27	@	.28
Bayberry	.30	@	.32
Ceresin, white ..... lb.	.14	@	.15
Yellow	.13	@	.14
Whiting, commercial.... cwt.	1.40	@	—
Gilders Bolted	1.45	@	—
Paris, white Amer..cwt.	1.50	@	1.60
English ,cliffstone..cwt.	2.00	@	—
Quaker ..... ton	13.00	@	15.00
Xylol (gal) pure	.42	@	.45
Commercial	.30	@	.35
Zinc Oxide, French process Red Seal	.10¾	@	.11¼
Green seal	.11¾	@	.12¼
White seal.....	.13	@	.13¼
Leaded Grades— Commercial, lead free ..	.09½	@	.10½
5 per ct. lead sulphate..	.08½	@	.09
10 per ct. lead sulphate.	.08⅝	@	.08⅞
20 per ct. lead sulphate	.08¼	@	.08¾
35 per ct. lead sulphate	.08⅛	@	.08⅝
Zinc Sulphate	.03¼	@	.03½

Crude Rubber

NEW YORK, JANUARY 17, 1921

The expected has come to pass in the crude rubber market. Shortly after the beginning of the new year, buyers from many sections of the country began submitting inquiries to the local market. These inquiries soon were followed by orders, and the market responded with several sharp advances.

So far from discouraging demand, the price advances have only served to stimulate buying, and brokers and dealers are now doing a fair volume of business; doubly welcome in view of the discouragements experienced during the closing weeks of 1920.

Manufacturers of drug sundries and rubber footwear have been in the market for fairly large quantities of crude during the period, and shipments are once again beginning to go West to the factories. Tire manufacturers have also been in-

strumental in buoying the market, and demand from this source shows signs of becoming more and more consistent.

Available stocks of crude rubber in this country are estimated by one factor to be not more than 72,000 tons. This quantity, it is felt, will not fill the requirements of the domestic trade for the first quarter of the year at the present rate of buying. Consumers in this country, apparently, are of the same frame of mind, and numerous orders for crude are going forward to the London market. The latter mart has also felt the quickening demand, largely it is said, through cabled orders from the United States, and prices there are also on the increase.

Latest advices from London received here quote ribbed sheets at 12½ d. on the spot, and latex at 14½ d. both of which were selling in fair quantities. Many New York dealers have direct London connections, and it is reported in the trade that some of these interests are engaged in covering short foreign accounts.

Ceylons have felt most of the firmness in the market, following the revival in buying interest. Smoked sheets ribbed on the spot have advanced from 16 cents per pound, to 19 cents bid and 20 cents asked. January-March delivery are held firm at 20 cents, with January-June strong at 21 cents. Plain smoked sheets on spot are held at 16 cents, a 2 cent per pound advance. Other grades show proportionate advances.

Those in close touch with the situation predict that the present advance is not a mere flash in the pan. Buyers have been out of the market for large quantities of crude for months past, they point out, and the small buying, while not sensational, has been sufficiently heavy in the aggregate to make severe inroads in available supplies.

The real heavy buyers are now coming in, it is further declared, and when these buyers realize the condition of the market, it is very probable that heavier buying will come naturally.

Ceylons			
Smoked sheets, ribbed, spot	.19	@	.20
Smoked sheets ribbed Jan. Mch.	.20	@	—
Smoked sheets ribbed Jan. June	.21	@	—
Smoked sheet plain, spot	.16	@	—
First latex pale crepe	.21	@	—
Amber crepe, No. 1	.18	@	—
Amber crepe, No. 2	.17	@	—
Amber crepe, No. 3	.16	@	—
Clean brown crepe	.16	@	—
Light clean brown crepe	—	@	—
Roll brown crepe	.14	@	—
Grand Central crepe	Nominal		
Africans			
Rio Neunz string	—	@	—
*No. 1 Benbuella	Nominal		
*No. 2 Benbuella	—	@	—
Paras			
Up-river fine	.18	@	—
Up-river medium	.14	@	—
Up-river coarse	.13	@	—
Caucho ball	.13	@	—
Islands fine	.16½	@	—
Maderia fine	—	@	—
Cameta	.11½	@	.12
Knapsack	Nominal		
Centrals			
Corinto prime	.14	@	—
Esmerelda prime	.14	@	—
Miscellaneous			
Guayule wet	—	@	—
*Balata block Panama	.28	@	—
Balata sheets	.69	@	—
Palembang	.06½	@	—
Bangermassin	.06	@	—
Columbian Block Balata	.46	@	—
Prime Pontianac	.06	@	—

* Nominal

Scrap Rubber

NEW YORK, JANUARY 17, 1921

Although sales of scrap rubber still continue infrequent, and for very small quantities at a time, the outlook is distinctly more promising than it has been for months past. The long awaited turn in the crude rubber market has apparently arrived, and with prices on the crude stock showing more firmness from day to day, consumers are again showing interest in reclaimed rubber.

Many inquiries for scrap are reaching jobbers from the reclaimers, but thus far little purchasing has resulted from these inquiries. Jobbers, however, are distinctly more optimistic over the situation, and expect a gradual betterment of conditions in their branch of the market from now on.

Many manufacturers who ordinarily use stocks of reclaimed rubber in their factories have turned to the use of crude during the past half year. Crude rubber was not only better for their purposes, but could actually be had on a par with, or below, the cost of reclaimed rubber. Under these circumstances, many of the manufacturers got away from the use of reclaimed stock, and the market suffered in consequence.

Stocks of scrap rubber held by various jobbers are still fairly large, and any buyer coming into the market with a firm bid for a round lot of scrap could probably secure price concessions. Jobbers have made few sales for many months past, and are anxious to speed up their turnover so as to get things going again in the market.

Prices quoted locally show no change, the market being held on a nominal basis throughout. No change in prices.

	Cents per Pound		
Solid Tires	1.50	@	2.00
Auto Tire Peelings	2.50	@	2.75
Truck Tires	2.00	@	2.25
Black Rubber	1.50	@	2.00
Boots and Shoes	4.25	@	4.50
Arctics, trimmed	3.25	@	4.50
Arctics, untrimmed	—	@	—
Tire—Automobile	1.00	@	1.25
Bicycles, pneumatic	1.00	@	1.50
Mixed Hose	.50	@	1.00
Air Brake	1.50	@	—
Inner Tubes, No. 1	8.00	@	8.50
Inner Tubes, No. 2	5.50	@	6.50
Red Tubes	4.00	@	5.00

Akron Stock Prices

(Special Akron Correspondence)

Investors in rubber shares on the Akron stock market are firm in their belief that a return of prosperity in the tire business is not very far off. There has been a good demand for most shares listed since the first of the year and prices have advanced by leaps and bounds.

Firestone common is up 20 points with 90 asked. The preferreds of this company also are up from 10 to 15 points.

Goodrich common is up 15 points and preferred is bringing 10 points better than it did a short time back.

Goodyear stocks which have shifted back and forth with each varying report on the refinancing of the company have started a new climb upward and are selling at from 10 to 15 points above their low marks.

Portage Rubber which also is refinancing, has ended its stock slump and shares of this company are bringing better prices.

Miller Rubber fell with Firestone. It is climbing back at the same rate.

Following are the quotations for January 17:

	Bid	Asked
Amer. R. & T. com.	45	70
Amazon Rubber	...	45
Firestone T. & R. com.	...	90
do 6 pct. pfd.	85	...
do 7 pct. pfd.	76	80
General T. & R. com.	...	300
do 7 pct. pfd.	...	85
B. F. Goodrich T. & R. com.	40	42
do 7 pct. pfd.	77½	78½
do 5 yr. 7 pct. notes	88	90
Goodyear T. & R. com.	26	28
do 7 pct. pfd.	53	55
India Rubber com.	90	130
do 8 pct. pfd.	...	80
Mason T. & R. com.	20	21
do 7 pct. pfd.	66	70
Marathon T. & R. com.	...	4
Miller Rubber com.	85	90
do 8 pct. pfd.	82	...
Mohawk Rubber	115	...
Portage Rubber com.	25	28
do 7 pct. pfd.	42	45
Republic Rubber com.	1¼	1⅝
do 7 pct. pfd.	...	40
do 8 pct. pfd.	19	22
Rubber Products	...	100
Star Rubber com.	...	100
do 8 pct. pfd.	...	100
Swinehart T. & R. com.	...	40
do 7 pct. pfd.	...	70
Phoenix Rub. com.	...	20
do pfd.	...	90
Standard Tire com.	...	125
do pfd.	...	90

American Rubber Patents

ISSUED JANUARY 4, 1921

1,364,132—To Charles E. Miller, Anderson, Ind. Roller for treating rubber and rubber substitutes.

1,364,133—To Charles E. Miller, Anderson, Ind. Tube-splice vulcanizer.

1,364,200—To Rudolph Kramer, Sheyenne, N. D. Emergency-tire for automobile wheels.

1,364,241—To George W. Brownell, Leominser, Mass. Device for molding tire-treads.

1,364,250—To Franklin H. Clapp, Melrose, Mass. Outsole.

1,364,300—To James Edmund Parr, Crystal City, Manitoba, Canada. Tire alarm.

1,364,319—To William T. Rollins, Boston, Mass., assignor one-half to William H. Davis, Brookline, Mass. Anti-skid attachment for rubber-tired wheels.

1,364,576—To Alvin J. Musselman, Chicago, Ill. Golf-ball structure and method of making same.

1,364,583—To Henry Woodward Rogers, New York, N. Y., assignor to the Rigers Rubber Company, Westminster, Md. Resilient heel-tread.

1,364,732—To Carl R. DeLong, Washington, D. C., and Warren Neal Watson, Auburn, Me. Process of vulcanization of natural or artificial or rubber-like substances.

1,364,758—To Francis Hickman, Bound Brook, N. J., assignor one-half to Bound Brook Oil-less Bearing Co., Bound Brook, N. J. Tire.

1,364,790—To Frank E. Nelson, Chicago, Ill. Airless tire.

1,364,818—To Goodwin B. Smith, Philadelphia, Pa. Waterproof fabric.

ISSUED DECEMBER 28, 1920

1,363,229—To James C. Burdette, Chicago, Ill., assignor to Dryden Rubber Co., Chicago, Ill. Material used in rubber manufacture and process of manufacture.

1,363,300—To Oliver S.Yohn, New York, N. Y. Tire.

1,363,408—To George K. Guinzburg, New York, N. Y., assignor to I. B. Kleinert Rubber Co., New York, N. Y. Bathing cap.

1,363,462—To Abram E. Falor and Frank J. MacDonald, Akron, Ohio, assignors to the B. F. Goodrich Co., Beveling device for rubber tubes.

1,363,743—To Lawrence J. Meredith, Rupert, Idaho. Tire.

1,363,802—To William M. Metzler, Akron, Ohio., assignor to the Goodyear Tire & Rubber Co., Akron, Ohio. Core-stripper for pneumatic tires.

1,363,821—To Lake H. Sprinkle, Brooklyn, N. Y., and Frank Wolfe, Merrick, N. Y. Tire for automobile wheels.

1,363,856—To Ethelbert Favary, New York, N. Y. Resilient tire.

1,363,857—To Ethelbert Favary, New York, N. Y. Resilient tire.

1,363,976—To Stanley B. Holmes, Seattle, Wash. Automobile tire.

1,364,023—To Herman L. Beal, Brooklyn, N. Y. Rubber heel.